



SEQUENCE LISTING

<110> OriGene Technologies, Inc
<120> Regulated Angiogenesis Genes and Polypeptides
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<170> PatentIn version 3.1
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cgc cgt cgc cgc cg 5 10 15
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Gln Leu Arg Lys Leu Phe Ile Gly Gly Leu Ser Phe Glu Thr Thr Asp
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Asp Ser Leu Arg Glu His Phe Glu Lys Trp Gly Thr Leu Thr Asp Cys
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Val Val Met Arg Asp Pro Gln Thr Lys Arg Ser Arg Gly Phe Gly Phe
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Pro His Lys Val Asp Gly Arg Val Val Glu Pro Lys Arg Ala Val Ser
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Arg Glu Asp Ser Val Lys Pro Gly Ala His Leu Thr Val Lys Lys Ile
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cat gat aca gtt gat aaa att gtt gtt cag aaa tac cac act att aat His Asp Thr Val Asp Lys Ile Val Val Gln Lys Tyr His Thr Ile Asn	180	185	190	637
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gga aac ttt ggt gga aga gga ggc tat ggt ggt gga ggt ggt ggc agc Gly Asn Phe Gly Arg Gly Gly Tyr Gly Gly Gly Gly Gly Ser	245	250	255	829
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Asp Ser Leu Arg Glu His Phe Glu Lys Trp Gly Thr Leu Thr Asp Cys
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Val Thr Tyr Ser Cys Val Glu Glu Val Asp Ala Ala Met Cys Ala Arg
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Arg Glu Asp Ser Val Lys Pro Gly Ala His Leu Thr Val Lys Lys Ile
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Tyr Phe Glu Lys Tyr Gly Lys Ile Glu Thr Ile Glu Val Met Glu Asp
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Gly His Asn Cys Glu Val Lys Lys Ala Leu Ser Lys Gln Glu Met Gln
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cacact atg acc gct ccc gaa aag ccc gtg aaa caa gag gaa atg gct			228
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Ala Leu Asp Val Asp Ser Gly Gly Gly Gly Gly Gly Gly His			
15 20 25 30			
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Gly Glu Tyr Leu Gln Gln Gln His Gly Asn Gly Ala Val Ala			
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gcc gct acc tgc agc aag ata ggg ccg cca tcg ccg ggc gac gac gag			420
Ala Ala Thr Cys Ser Lys Ile Gly Pro Pro Ser Pro Gly Asp Asp Glu			
65 70 75			
gag gag gcf gcc gca gcc ggg gcc ccc gcc gcc gca gca gca aca			468
Glu Glu Ala Ala Ala Ala Gly Ala Pro Ala Ala Gly Ala Thr			
80 85 90			
ggf gat ttg gct tct gca cag tta gga gga gca cca aac cga tgg gag			516
Gly Asp Leu Ala Ser Ala Gln Leu Gly Gly Ala Pro Asn Arg Trp Glu			
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gtt ttg tca gcc aca cct aca act ata aaa gat gaa gct ggt aat cta			564
Val Leu Ser Ala Thr Pro Thr Thr Ile Lys Asp Glu Ala Gly Asn Leu			
115 120 125			
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Val Gln Ile Pro Ser Ala Ala Thr Ser Ser Gly Gln Tyr Val Leu Pro			
130 135 140			
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Leu Gln Asn Leu Gln Asn Gln Ile Phe Ser Val Ala Pro Gly Ser			
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Asp Ser Ser Asn Gly Ala Val Ser Ser Val Gln Tyr Gln Val Ile Pro			
160 165 170			
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Gln Ile Gln Ser Ala Asp Gly Gln Gln Val Gln Ile Gly Phe Thr Gly			
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Ser Ser Asp Asn Gly Gly Ile Asn Gln Glu Ser Ser Gln Ile Gln Ile			
195 200 205			
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aat gtg cct ctt ggt ctg cca gga aat att acg ttt gta cca atc aat Asn Val Pro Leu Gly Leu Pro Gly Asn Ile Thr Phe Val Pro Ile Asn 255	260	265	996
agt gtc gat cta gat tct ttg gga ctc tcg ggc agt tct cag aca atg Ser Val Asp Leu Asp Ser Leu Gly Leu Ser Gly Ser Ser Gln Thr Met 275	280	285	1044
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gca cag aat att cag gtt tct aca gca cag cct gtt gta cag cat cta Ala Gln Asn Ile Gln Val Ser Thr Ala Gln Pro Val Val Gln His Leu 385	390	395	1380
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acc ttt tta att cag gca cag aca gtg acc cct tct gga cag gta act Thr Phe Leu Ile Gln Ala Gln Thr Val Thr Pro Ser Gly Gln Val Thr 450	455	460	1572
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gtt aat act tcc gcc acc agc aat caa gat atc ctt acc aac act gaa Val Asn Thr Ser Ala Thr Ser Asn Gln Asp Ile Leu Thr Asn Thr Glu 755	760	765	2484
ata cct tta cag ctt gtc aca gtt tct gga aat gag aca atg gag Ile Pro Leu Gln Leu Val Thr Val Ser Gly Asn Glu Thr Met Glu 770	775	780	2529
taaatattac acaaatactt attcattgtg gttatTTTA tacagtagtg agaagaatat tgttcctaag ttcttagata tcTTTTATT gatgtcaaa aATTTTgga ttgacagtaa cttggTTATA catgacactg aaatgcCTTA ctTTGTATGA tattCCATAG tatTTTAA atggTTAAAT tgcatGGGTT ttGTTAGGTAC ttTTGGAATC tagaAGAAAT gaaATTTAC caagTTATAT aaAGAGAAAAA ttGAATTTAA caatgcGAAT ggtAGTCTAA ccaaATGCAT caatCCTGTG tggTTAGTG taaaaATGAG aacatGTTGG tatttATCTA ttGTAAGATA aaaaAGCTGG tggGTgAAAG aaATCATGTT atgATAAAAATtTTGTAAT ttTCTTGATG actGGAATTt ttATTATGCA taACTGACAA atCAAGTTTC caAGCAAATG ttACATAGTG taggCTTAC ttAGCTTAC AATTGTcat ttGAGCTA ATTATTTAA ttAGGTtaAC tatGTACAAT ATTtTAAGCA ttACTCTGT aAGATTTGA AAActACATT ttaACATGGA actCTAGGGA tagTCACCTT ttaATCCTG ttGAAAAGCC atGTTTAAGA ttTAATTGc caAAATAATG tCTTGTtaAT ATTCTTCAA TAACGAAGTT gggCAATAc ACCAATGTT aaaaAAAGTT AAAATGTATA AGTTGAGGCA ttTGGGTGGT aAGAGAATGT tATAGTGAAT tatCCCTTT CTTGACTATT ggAGGACCAA AAAATAAGGT gtATTGCGTC ttAGCAGTGA ttttATCCAA tCTTGTtTCC AAAAACCATG gtCTCCCAGG gcCTTAAAG cCATCATGTA aATTACCAgT AAAGTGTAAc ATATGCAAAC ATAACAAAAT CACTCCATA gtGACGATAc tccaACCATA tggATATTAG tCATAGAAGA ACTAGAGGTT ttATGATATT ttTTTAAGTC ttttTTTTt GTCTAGGTAG tCAGTCTGCA CTAAATATC AATCATTTC CTTTTTGCT tCTCCCTTA AAATTATAT GTATCCAGTA CATTTAATTG AGAAGCGTAT GTTTTTATT atGCTGTATT ttCTTTTAT ttTTTAATTt TTGTTTATAT ttTCAATTCA AAAATGTACA aaATAAAGTT ACATTGCTGG tCTGTGTAAG AGCTATACAG ttTCCtAAAG TGTATACCTG taACTGcAGC AGTTCACCTA ttGCAAAAAA ttGGAATTc tGTTCAATTG ttATTCTAA gaccACCTCA AATTAAAGG CTACCTTATT GTACGTTAA AGTGTATTAT AACAGTGTGG tagTTAATAA AACACTATTt ttTTTCTTT TGAAaaaaaaaaA aaaaaaaaaaaa aaaaaaaaaaaaA aaaaaaa	750	2589	
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35 40 45

Ala Ala Ala Gln Asp Thr Gln Pro Ser Pro Leu Ala Leu Leu Ala Ala
50 55 60

Thr Cys Ser Lys Ile Gly Pro Pro Ser Pro Gly Asp Asp Glu Glu Glu
65 70 75 80

Ala Ala Ala Ala Ala Gly Ala Pro Ala Ala Gly Ala Thr Gly Asp
85 90 95

Leu Ala Ser Ala Gln Leu Gly Gly Ala Pro Asn Arg Trp Glu Val Leu
100 105 110

Ser Ala Thr Pro Thr Thr Ile Lys Asp Glu Ala Gly Asn Leu Val Gln
115 120 125

Ile Pro Ser Ala Ala Thr Ser Ser Gly Gln Tyr Val Leu Pro Leu Gln
130 135 140

Asn Leu Gln Asn Gln Ile Phe Ser Val Ala Pro Gly Ser Asp Ser
145 150 155 160

Ser Asn Gly Ala Val Ser Ser Val Gln Tyr Gln Val Ile Pro Gln Ile
165 170 175

Gln Ser Ala Asp Gly Gln Gln Val Gln Ile Gly Phe Thr Gly Ser Ser
180 185 190

Asp Asn Gly Gly Ile Asn Gln Glu Ser Ser Gln Ile Gln Ile Ile Pro
195 200 205

Gly Ser Asn Gln Thr Leu Leu Ala Ser Gly Thr Pro Ser Ala Asn Ile
210 215 220

Gln Asn Leu Ile Phe Gln Thr Gly Gln Val Gln Val Gln Gly Val Ala
225 230 235 240

Ile Gly Gly Ser Ser Phe Pro Gly Gln Thr Gln Val Val Ala Asn Val
245 250 255

Pro Leu Gly Leu Pro Gly Asn Ile Thr Phe Val Pro Ile Asn Ser Val
260 265 270

Asp Leu Asp Ser Leu Gly Leu Ser Gly Ser Ser Gln Thr Met Thr Ala
275 280 285

Gly Ile Asn Ala Asp Gly His Leu Ile Asn Thr Gly Gln Ala Met Asp
290 295 300

Ser Ser Asp Asn Ser Glu Arg Thr Gly Glu Arg Val Ser Pro Asp Ile
305 310 315 320

Asn Glu Thr Asn Thr Asp Thr Asp Leu Phe Val Pro Thr Ser Ser Ser
325 330 335

Ser Gln Leu Pro Val Thr Ile Asp Ser Thr Gly Ile Leu Gln Gln Asn
340 345 350

Thr Asn Ser Leu Thr Thr Ser Ser Gly Gln Val His Ser Ser Asp Leu
355 360 365

Gln Gly Asn Tyr Ile Gln Ser Pro Val Ser Glu Glu Thr Gln Ala Gln
370 375 380

Asn Ile Gln Val Ser Thr Ala Gln Pro Val Val Gln His Leu Gln Leu
385 390 395 400

Gln Glu Ser Gln Gln Pro Thr Ser Gln Ala Gln Ile Val Gln Gly Ile
405 410 415

Thr Pro Gln Thr Ile His Gly Val Gln Ala Ser Gly Gln Asn Ile Ser
420 425 430

Gln Gln Ala Leu Gln Asn Leu Gln Leu Gln Leu Asn Pro Gly Thr Phe
435 440 445

Leu Ile Gln Ala Gln Thr Val Thr Pro Ser Gly Gln Val Thr Trp Gln
450 455 460

Thr Phe Gln Val Gln Gly Val Gln Asn Leu Gln Asn Leu Gln Ile Gln
465 470 475 480

Asn Thr Ala Ala Gln Gln Ile Thr Leu Thr Pro Val Gln Thr Leu Thr

485 490 495

Leu Gly Gln Val Ala Ala Gly Gly Ala Phe Thr Ser Thr Pro Val Ser

500 505 510

Leu Ser Thr Gly Gln Leu Pro Asn Leu Gln Thr Val Thr Val Asn Ser

515 520 525

Ile Asp Ser Ala Gly Ile Gln Leu His Pro Gly Glu Asn Ala Asp Ser

530 535 540

Pro Ala Asp Ile Arg Ile Lys Glu Glu Glu Pro Asp Pro Glu Glu Trp

545 550 555 560

Gln Leu Ser Gly Asp Ser Thr Leu Asn Thr Asn Asp Leu Thr His Leu

565 570 575

Arg Val Gln Val Val Asp Glu Glu Gly Asp Gln Gln His Gln Glu Gly

580 585 590

Lys Arg Leu Arg Arg Val Ala Cys Thr Cys Pro Asn Cys Lys Glu Gly

595 600 605

Gly Gly Arg Gly Thr Asn Leu Gly Lys Lys Lys Gln His Ile Cys His

610 615 620

Ile Pro Gly Cys Gly Lys Val Tyr Gly Lys Thr Ser His Leu Arg Ala

625 630 635 640

His Leu Arg Trp His Ser Gly Glu Arg Pro Phe Val Cys Asn Trp Met

645 650 655

Tyr Cys Gly Lys Arg Phe Thr Arg Ser Asp Glu Leu Gln Arg His Arg

660 665 670

Arg Thr His Thr Gly Glu Lys Lys Phe Val Cys Pro Glu Cys Ser Lys

675 680 685

Arg Phe Met Arg Ser Asp His Leu Ala Lys His Ile Lys Thr His Gln

690 695 700

Asn Lys Lys Gly Ile His Ser Ser Ser Thr Val Leu Ala Ser Val Glu

705 710 715 720

Ala Ala Arg Asp Asp Thr Leu Ile Thr Ala Gly Gly Thr Thr Leu Ile

725 730 735

Leu Ala Lys Ile Gln Gln Gly Ser Val Ser Gly Ile Gly Thr Val Asn
740 745 750

Thr Ser Ala Thr Ser Asn Gln Asp Ile Leu Thr Asn Thr Glu Ile Pro
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Leu Gln Leu Val Thr Val Ser Gly Asn Glu Thr Met Glu
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 gccgccttcg ctccctcacca tgtgttaaggc gcggggagc cccgcctgag gtgcctaaa 120
 cacact atg acc gct ccc gaa aag ccc gtg aaa caa gag gaa atg gct 180
 Met Thr Ala Pro Glu Lys Pro Val Lys Gln Glu Glu Met Ala
 1 5 10
 gcc ttg gac gtg gat agc ggc ggc ggt ggc ggc ggc ggc ggc cac 228
 Ala Leu Asp Val Asp Ser Gly Gly Gly Gly Gly Gly Gly His
 15 20 25 30
 ggc gag tat ctg cag cag cag caa cag cac gga aac ggt gcg gtg gcg 276
 Gly Glu Tyr Leu Gln Gln Gln Gln His Gly Asn Gly Ala Val Ala
 35 40 45
 gcg gca gcg gcc cag aca ggt gat ttg gct tct gca cag tta gga 324
 Ala Ala Ala Ala Gln Thr Gly Asp Leu Ala Ser Ala Gln Leu Gly
 50 55 60
 gga gca cca aac cga tgg gag gtt ttg tca gcc aca cct aca act ata 372
 Gly Ala Pro Asn Arg Trp Glu Val Leu Ser Ala Thr Pro Thr Thr Ile
 65 70 75
 aaa gat gaa gct ggt aat cta gtc cag att cca agt gct gct act tca 420
 Lys Asp Glu Ala Gly Asn Leu Val Gln Ile Pro Ser Ala Ala Thr Ser
 80 85 90
 agt ggg cag tat gtt ctt ccc ctt cag aat ttg cag aat caa caa ata 468
 Ser Gly Gln Tyr Val Leu Pro Leu Gln Asn Leu Gln Asn Gln Gln Ile
 95 100 105 110
 ttt tcc gtt gca cca gga tca gat tca tca aat ggt gca gtg tcc agt 516
 Phe Ser Val Ala Pro Gly Ser Asp Ser Ser Asn Gly Ala Val Ser Ser
 115 120 125
 gtt caa tat caa gtt ata cca cag atc cag tca gca gat ggt cag cag 564
 Val Gln Tyr Gln Val Ile Pro Gln Ile Gln Ser Ala Asp Gly Gln Gln
 612

130	135	140	
gtt caa att ggt ttc aca ggc tct tca gat aat ggg ggt ata aat caa Val Gln Ile Gly Phe Thr Gly Ser Ser Asp Asn Gly Gly Ile Asn Gln 145	150	155	660
gaa agc agt caa att cag atc att cct ggc tct aat caa acc tta ctt Glu Ser Ser Gln Ile Gln Ile Pro Gly Ser Asn Gln Thr Leu Leu 160	165	170	708
gcc tct gga aca cct tct gct aac atc cag aat ctc ata cca cag act Ala Ser Gly Thr Pro Ser Ala Asn Ile Gln Asn Leu Ile Pro Gln Thr 175	180	185	756
ggc caa gtc cag gtt cag gga gtt gca att ggt ggt tca tct ttt cct Gly Gln Val Gln Val Gly Val Ala Ile Gly Gly Ser Ser Phe Pro 195	200	205	804
ggc caa acc caa gta gtt gct aat gtg cct ctt ggt ctg cca gga aat Gly Gln Thr Gln Val Val Ala Asn Val Pro Leu Gly Leu Pro Gly Asn 210	215	220	852
att acg ttt gta cca atc aat agt gtc gat cta gat tct ttg gga ctc Ile Thr Phe Val Pro Ile Asn Ser Val Asp Leu Asp Ser Leu Gly Leu 225	230	235	900
tcg ggc agt tct cag aca atg act gca ggc att aat gcc gac gga cat Ser Gly Ser Ser Gln Thr Met Thr Ala Gly Ile Asn Ala Asp Gly His 240	245	250	948
ttg ata aac aca gga caa gct atg gat agt tca gac aat tca gaa agg Leu Ile Asn Thr Gly Gln Ala Met Asp Ser Ser Asp Asn Ser Glu Arg 255	260	265	996
act ggt gag cgg gtt tct cct gat att aat gaa act aat act gat aca Thr Gly Glu Arg Val Ser Pro Asp Ile Asn Glu Thr Asn Thr Asp Thr 275	280	285	1044
gat tta ttt gtg cca aca tcc tct tca tca cag ttg cct gtt acg ata Asp Leu Phe Val Pro Thr Ser Ser Ser Gln Leu Pro Val Thr Ile 290	295	300	1092
gat agt aca ggt ata tta caa caa aac aca aat agc ttg act aca tct Asp Ser Thr Gly Ile Leu Gln Gln Asn Thr Asn Ser Leu Thr Thr Ser 305	310	315	1140
agt ggg cag gtt cat tct tca gat ctt cag gga aat tat atc cag tcg Ser Gly Gln Val His Ser Ser Asp Leu Gln Gly Asn Tyr Ile Gln Ser 320	325	330	1188
cct gtt tct gaa gag aca cag gca cag aat att cag gtt tct aca gca Pro Val Ser Glu Glu Thr Gln Ala Gln Asn Ile Gln Val Ser Thr Ala 335	340	345	1236
cag cct gtt gta cag cat cta caa ctt caa gag tct cag cag cca acc Gln Pro Val Val Gln His Leu Gln Leu Gln Glu Ser Gln Gln Pro Thr 355	360	365	1284
agt caa gcc caa att gtg caa ggt att aca cca cag aca atc cat ggt Ser Gln Ala Gln Ile Val Gln Gly Ile Thr Pro Gln Thr Ile His Gly 370	375	380	1332
gtg caa gcc agt ggt caa aat ata tca caa cag gct ttg caa aat ctt Val Gln Ala Ser Gly Gln Asn Ile Ser Gln Gln Ala Leu Gln Asn Leu			1380

385	390	395	
cag ttg cag ctg aat cct gga acc ttt tta att cag gca cag aca gtg Gln Leu Gln Leu Asn Pro Gly Thr Phe Leu Ile Gln Ala Gln Thr Val 400 405 410			1428
acc act tct gga cag gta act tgg caa acg ttt caa gta caa ggg gtc Thr Pro Ser Gly Gln Val Thr Trp Gln Thr Phe Gln Val Gln Gly Val 415 420 425 430			1476
cag aac ttg cag aat ttg caa ata cag aat act gct gcc caa caa ata Gln Asn Leu Gln Asn Leu Gln Ile Gln Asn Thr Ala Ala Gln Gln Ile 435 440 445			1524
act ctg acg cct gtt caa acc ctc aca ctt ggt caa gtt gcg gca ggt Thr Leu Thr Pro Val Gln Thr Leu Thr Leu Gly Gln Val Ala Ala Gly 450 455 460			1572
gga gcc ttc act tca act cca gtt agt cta agc act ggt cag ttg cca Gly Ala Phe Thr Ser Thr Pro Val Ser Leu Ser Thr Gly Gln Leu Pro 465 470 475			1620
aat cta caa aca gtt aca gtc aac tct ata gat tct gct ggt ata cag Asn Leu Gln Thr Val Thr Val Asn Ser Ile Asp Ser Ala Gly Ile Gln 480 485 490			1668
cta cat cca gga gag aat gct gac agt cct gca gat att agg atc aag Leu His Pro Gly Glu Asn Ala Asp Ser Pro Ala Asp Ile Arg Ile Lys 495 500 505 510			1716
gaa gaa gaa cct gat cct gaa gag tgg cag ctc agt ggt gat tct acc Glu Glu Glu Pro Asp Pro Glu Glu Trp Gln Leu Ser Gly Asp Ser Thr 515 520 525			1764
ttg aat acc aat gac cta aca cac tta aga gta cag gtg gta gat gaa Leu Asn Thr Asn Asp Leu Thr His Leu Arg Val Gln Val Val Asp Glu 530 535 540			1812
gaa ggg gac caa caa cat caa gaa gga aaa aga ctt cg ^g agg gta gct Glu Gly Asp Gln Gln His Gln Glu Gly Lys Arg Leu Arg Arg Val Ala 545 550 555			1860
tgc acc tgt ccc aac tgt aaa gaa ggt ggt gga aga ggt acc aat ctt Cys Thr Cys Pro Asn Cys Lys Glu Gly Gly Arg Gly Thr Asn Leu 560 565 570			1908
ggg aaa aag aag caa cac att tgt cat ata cca gga tgt ggt aaa gtc Gly Lys Lys Gln His Ile Cys His Ile Pro Gly Cys Gly Lys Val 575 580 585 590			1956
tat ggg aag acc tca cat ctg aga gct cat ctg cgt tgg cat tct gga Tyr Gly Lys Thr Ser His Leu Arg Ala His Leu Arg Trp His Ser Gly 595 600 605			2004
qaa cgc cct ttt gtt tgt aac tgg atg tac tgt ggt aaa aga ttt act Glu Arg Pro Phe Val Cys Asn Trp Met Tyr Cys Gly Lys Arg Phe Thr 610 615 620			2052
cga agt gat gaa tta cag agg cac aga aga aca cat aca ggt gag aag Arg Ser Asp Glu Leu Gln Arg His Arg Arg Thr His Thr Gly Glu Lys 625 630 635			2100
aaa ttt gtt tgt cca gaa tgt tca aaa cgc ttt atg aga agt gac cac Lys Phe Val Cys Pro Glu Cys Ser Lys Arg Phe Met Arg Ser Asp His			2148

640	645	650	
ctt gcc aaa cat att aaa aca cac cag aat aaa aaa ggt att cac tct Leu Ala Lys His Ile Lys Thr His Gln Asn Lys Lys Gly Ile His Ser 655	660	665	2196
agc agt aca gtg ctg gca tct gtg gaa gct gcg cga gat gat act ttg Ser Ser Thr Val Leu Ala Ser Val Glu Ala Ala Arg Asp Asp Thr Leu 675	680	685	2244
att act gca gga gga aca acg ctt atc ctt gca aag att caa caa ggt Ile Thr Ala Gly Gly Thr Thr Leu Ile Leu Ala Lys Ile Gln Gln Gly 690	695	700	2292
tct gtt tca ggg ata gga act gtt aat act tcc gcc acc agc aat caa Ser Val Ser Gly Ile Gly Thr Val Asn Thr Ser Ala Thr Ser Asn Gln 705	710	715	2340
gat atc ctt acc aac act gaa ata cct tta cag ctt gtc aca gtt tct Asp Ile Leu Thr Asn Thr Glu Ile Pro Leu Gln Leu Val Thr Val Ser 720	725	730	2388
gga aat gag aca atg gag taaatattac acaaatactt attcattgtg Gly Asn Glu Thr Met Glu 735	740		2436
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Tyr Leu Gln Gln Gln Gln His Gly Asn Gly Ala Val Ala Ala Ala			
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Ala Ala Ala Gln Thr Gly Asp Leu Ala Ser Ala Gln Leu Gly Gly Ala			
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Pro Asn Arg Trp Glu Val Leu Ser Ala Thr Pro Thr Thr Ile Lys Asp			
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75	80		

Glu Ala Gly Asn Leu Val Gln Ile Pro Ser Ala Ala Thr Ser Ser Gly			
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Gln Tyr Val Leu Pro Leu Gln Asn Leu Gln Asn Gln Gln Ile Phe Ser			
100	105	110	
110			

Val Ala Pro Gly Ser Asp Ser Ser Asn Gly Ala Val Ser Ser Val Gln			
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125			

Tyr Gln Val Ile Pro Gln Ile Gln Ser Ala Asp Gly Gln Gln Val Gln			
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Ile Gly Phe Thr Gly Ser Ser Asp Asn Gly Gly Ile Asn Gln Glu Ser			
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155	160		

Ser Gln Ile Gln Ile Ile Pro Gly Ser Asn Gln Thr Leu Leu Ala Ser			
165	170	175	
175			

Gly Thr Pro Ser Ala Asn Ile Gln Asn Leu Ile Pro Gln Thr Gly Gln			
180	185	190	
190			

Val Gln Val Gln Gly Val Ala Ile Gly Gly Ser Ser Phe Pro Gly Gln
195 200 205

Thr Gln Val Val Ala Asn Val Pro Leu Gly Leu Pro Gly Asn Ile Thr
210 215 220

Phe Val Pro Ile Asn Ser Val Asp Leu Asp Ser Leu Gly Leu Ser Gly
225 230 235 240

Ser Ser Gln Thr Met Thr Ala Gly Ile Asn Ala Asp Gly His Leu Ile
245 250 255

Asn Thr Gly Gln Ala Met Asp Ser Ser Asp Asn Ser Glu Arg Thr Gly
260 265 270

Glu Arg Val Ser Pro Asp Ile Asn Glu Thr Asn Thr Asp Thr Asp Leu
275 280 285

Phe Val Pro Thr Ser Ser Ser Gln Leu Pro Val Thr Ile Asp Ser
290 295 300

Thr Gly Ile Leu Gln Gln Asn Thr Asn Ser Leu Thr Thr Ser Ser Gly
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Gln Val His Ser Ser Asp Leu Gln Gly Asn Tyr Ile Gln Ser Pro Val
325 330 335

Ser Glu Glu Thr Gln Ala Gln Asn Ile Gln Val Ser Thr Ala Gln Pro
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Val Val Gln His Leu Gln Leu Gln Glu Ser Gln Gln Pro Thr Ser Gln
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Ala Gln Ile Val Gln Gly Ile Thr Pro Gln Thr Ile His Gly Val Gln
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Ala Ser Gly Gln Asn Ile Ser Gln Gln Ala Leu Gln Asn Leu Gln Leu
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Gln Leu Asn Pro Gly Thr Phe Leu Ile Gln Ala Gln Thr Val Thr Pro
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Ser Gly Gln Val Thr Trp Gln Thr Phe Gln Val Gln Gly Val Gln Asn
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Leu Gln Asn Leu Gln Ile Gln Asn Thr Ala Ala Gln Gln Ile Thr Leu
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Gln Thr Val Thr Val Asn Ser Ile Asp Ser Ala Gly Ile Gln Leu His
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Pro Gly Glu Asn Ala Asp Ser Pro Ala Asp Ile Arg Ile Lys Glu Glu
500 505 510

Glu Pro Asp Pro Glu Glu Trp Gln Leu Ser Gly Asp Ser Thr Leu Asn
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Thr Asn Asp Leu Thr His Leu Arg Val Gln Val Val Asp Glu Glu Gly
530 535 540

Asp Gln Gln His Gln Glu Gly Lys Arg Leu Arg Arg Val Ala Cys Thr
545 550 555 560

Cys Pro Asn Cys Lys Glu Gly Gly Arg Gly Thr Asn Leu Gly Lys
565 570 575

Lys Lys Gln His Ile Cys His Ile Pro Gly Cys Gly Lys Val Tyr Gly
580 585 590

Lys Thr Ser His Leu Arg Ala His Leu Arg Trp His Ser Gly Glu Arg
595 600 605

Pro Phe Val Cys Asn Trp Met Tyr Cys Gly Lys Arg Phe Thr Arg Ser
610 615 620

Asp Glu Leu Gln Arg His Arg Arg Thr His Thr Gly Glu Lys Lys Phe
625 630 635 640

Val Cys Pro Glu Cys Ser Lys Arg Phe Met Arg Ser Asp His Leu Ala
645 650 655

Lys His Ile Lys Thr His Gln Asn Lys Lys Gly Ile His Ser Ser Ser
660 665 670

Thr Val Leu Ala Ser Val Glu Ala Ala Arg Asp Asp Thr Leu Ile Thr
675 680 685

Ala Gly Gly Thr Thr Leu Ile Leu Ala Lys Ile Gln Gln Gly Ser Val
695 700

Ser Gly Ile Gly Thr Val Asn Thr Ser Ala Thr Ser Asn Gln Asp Ile
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Leu Thr Asn Thr Glu Ile Pro Leu Gln Leu Val Thr Val Ser Gly Asn
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Glu Thr Met Glu
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cagatccagt cagcagatgg tcagcaggtt caaatgggtt tcacaggctc ttcagataat 720
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caggttcagg gagttgcaat tggtggttca tctttcctg gtcaaaccac agtagttgct 900
aatgtgcctc ttggcttgcc agggaaatatt acgtttgtac caatcaatag tgtcgatcta 960
gattcttgg gactctcggg cagttctcag aca atg act gca ggc att aat gcc 1014
Met Thr Ala Gly Ile Asn Ala
1 5

gac gga cat ttg ata aac aca gga caa gct atg gat agt tca gac aat 1062
Asp Gly His Leu Ile Asn Thr Gly Gln Ala Met Asp Ser Ser Asp Asn

10

15

20

tcg gaa agg act ggt gag cgg gtt tct cct gat att aat gaa act aat Ser Glu Arg Thr Gly Glu Arg Val Ser Pro Asp Ile Asn Glu Thr Asn 25 30 35	1110
act gat aca gat tta ttt gtg cca aca tcc tct tca tca cag ttg cct Thr Asp Thr Asp Leu Phe Val Pro Thr Ser Ser Ser Gln Leu Pro 40 45 50 55	1158
gtt acg ata gat agt aca ggt ata tta caa caa aac aca aat agc ttg Val Thr Ile Asp Ser Thr Gly Ile Leu Gln Gln Asn Thr Asn Ser Leu 60 65 70	1206
act aca tct agt ggg cag gtt cat tct tca gat ctt cag gga aat tat Thr Thr Ser Ser Gly Gln Val His Ser Ser Asp Leu Gln Gly Asn Tyr 75 80 85	1254
atc cag tcg cct gtt tct gaa gag aca cag gca cag aat att cag gtt Ile Gln Ser Pro Val Ser Glu Glu Thr Gln Ala Gln Asn Ile Gln Val 90 95 100	1302
tct aca gca cag cct gtt gta cag cat cta caa ctt caa gag tct cag Ser Thr Ala Gln Pro Val Val Gln His Leu Gln Leu Gln Glu Ser Gln 105 110 115	1350
cag cca acc agt caa gcc caa att gtg caa ggt att aca cca cag aca Gln Pro Thr Ser Gln Ala Gln Ile Val Gln Gly Ile Thr Pro Gln Thr 120 125 130 135	1398
atc cat ggt gtg caa gcc agt ggt caa aat ata tca caa cag gct ttg Ile His Gly Val Gln Ala Ser Gly Gln Asn Ile Ser Gln Gln Ala Leu 140 145 150	1446
caa aat ctt cag ttg cag ctg aat cct gga acc ttt tta att cag gca Gln Asn Leu Gln Leu Gln Asn Pro Gly Thr Phe Leu Ile Gln Ala 155 160 165	1494
cag aca gtg acc cct tct gga cag gta act tgg caa acg ttt caa gta Gln Thr Val Thr Pro Ser Gly Gln Val Thr Trp Gln Thr Phe Gln Val 170 175 180	1542
caa ggg gtc cag aac ttg cag aat ttg caa ata cag aat act gct gcc Gln Gly Val Gln Asn Leu Gln Asn Leu Gln Ile Gln Asn Thr Ala Ala 185 190 195	1590
caa caa ata act ttg acg cct gtt caa acc ctc aca ctt ggt caa gtt Gln Gln Ile Thr Leu Thr Pro Val Gln Thr Leu Thr Leu Gly Gln Val 200 205 210 215	1638
gcg gca ggt gga gcc ttc act tca act cca gtt agt cta agc act ggt Ala Ala Gly Gly Ala Phe Thr Ser Thr Pro Val Ser Leu Ser Thr Gly 220 225 230	1686
cag ttg cca aat cta caa aca gtt aca gtg aac tct ata gat tct gct Gln Leu Pro Asn Leu Gln Thr Val Thr Val Asn Ser Ile Asp Ser Ala 235 240 245	1734
ggt ata cag cta cat cca gga gag aat gct gac agt cct gca gat att Gly Ile Gln Leu His Pro Gly Glu Asn Ala Asp Ser Pro Ala Asp Ile 250 255 260	1782
agg atc aag gaa gaa cct gat cct gaa gag tgg cag ctc agt ggt Arg Ile Lys Glu Glu Pro Asp Pro Glu Glu Trp Gln Leu Ser Gly	1830

265	270	275	
gat tct acc ttg aat acc aat gac cta aca cac tta aga gta cag gtg Asp Ser Thr Leu Asn Thr Asn Asp Leu Thr His Leu Arg Val Gln Val 280 285 290 295			1878
gta gat gaa gaa ggg gac caa caa cat caa gaa gga aaa aga ctt cg Val Asp Glu Glu Gly Asp Gln Gln His Gln Glu Gly Lys Arg Leu Arg 300 305 310			1926
agg gta gct tgc acc tgt ccc aac tgt aaa gaa ggt ggt gga aga ggt Arg Val Ala Cys Thr Cys Pro Asn Cys Lys Glu Gly Gly Arg Gly 315 320 325			1974
acc aat ctt ggg aaa aag aag caa cac att tgt cat ata cca gga tgt Thr Asn Leu Gly Lys Lys Gln His Ile Cys His Ile Pro Gly Cys 330 335 340			2022
ggt aaa gtc tat ggg aag acc tca cat ctg aga gct cat ctg cgt tgg Gly Lys Val Tyr Gly Lys Thr Ser His Leu Arg Ala His Leu Arg Trp 345 350 355			2070
cat tct gga gaa cgc cct ttt gtt tgt aac tgg atg tac tgt ggt aaa His Ser Gly Glu Arg Pro Phe Val Cys Asn Trp Met Tyr Cys Gly Lys 360 365 370 375			2118
aga ttt act cga agt gat gaa tta cag agg cac aga aga aca cat aca Arg Phe Thr Arg Ser Asp Glu Leu Gln Arg His Arg Arg Thr His Thr 380 385 390			2166
ggt gag aag aaa ttt gtt tgt cca gaa tgt tca aaa cgc ttt atg aga Gly Glu Lys Lys Phe Val Cys Pro Glu Cys Ser Lys Arg Phe Met Arg 395 400 405			2214
agt gac cac ctt gcc aaa cat att aaa aca cac cag aat aaa aaa ggt Ser Asp His Leu Ala Lys His Ile Lys Thr His Gln Asn Lys Lys Gly 410 415 420			2262
att cac tct agc agt aca gtg ctg gca tct gtg gaa gct gcg cga gat Ile His Ser Ser Thr Val Leu Ala Ser Val Glu Ala Ala Arg Asp 425 430 435			2310
gat act ttg att act gca gga gga aca acg ctt atc ctt gca aag att Asp Thr Leu Ile Thr Ala Gly Gly Thr Thr Leu Ile Leu Ala Lys Ile 440 445 450 455			2358
caa caa ggt tct gtt tca ggg ata gga act gtt aat act tcc gcc acc Gln Gln Gly Ser Val Ser Gly Ile Gly Thr Val Asn Thr Ser Ala Thr 460 465 470			2406
agc aat caa gat atc ctt acc aac act gaa ata cct tta cag ctt gtc Ser Asn Gln Asp Ile Leu Thr Asn Thr Glu Ile Pro Leu Gln Leu Val 475 480 485			2454
aca gtt tct gga aat gag aca atg gag taaaatattac acaaatactt Thr Val Ser Gly Asn Glu Thr Met Glu 490 495			2501
atccattgtg gttattttta tacagtagtg agaagaatat tgttcctaag ttcttagata			2561
tctttttatt gatgtgcaaa aatttttgga ttgacagtaa cttggttata catgacactg			2621
aaatgcctta ctttgtatga tattccatag tatattaaaa atggtaaaat tgcatagggtt			2681

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<212> PRT
<213> Homo sapiens

<400> 8

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Prc Asp Ile Asn Glu Thr Asn Thr Asp Thr Asp Leu Phe Val Pro Thr
35 40 45

Ser Ser Ser Ser Gln Leu Pro Val Thr Ile Asp Ser Thr Gly Ile Leu
50 55 60

Gln Gln Asn Thr Asn Ser Leu Thr Thr Ser Ser Gly Gln Val His Ser
65 70 75 80

Ser Asp Leu Gln Gly Asn Tyr Ile Gln Ser Pro Val Ser Glu Glu Thr
85 90 95

Gln Ala Gln Asn Ile Gln Val Ser Thr Ala Gln Pro Val Val Gln His
100 105 110

Leu Gln Leu Gln Glu Ser Gln Gln Pro Thr Ser Gln Ala Gln Ile Val
115 120 125

Gln Gly Ile Thr Pro Gln Thr Ile His Gly Val Gln Ala Ser Gly Gln
130 135 140

Asn Ile Ser Gln Gln Ala Leu Gln Asn Leu Gln Leu Gln Leu Asn Pro
145 150 155 160

Gly Thr Phe Leu Ile Gln Ala Gln Thr Val Thr Pro Ser Gly Gln Val
165 170 175

Thr Trp Gln Thr Phe Gln Val Gln Gly Val Gln Asn Leu Gln Asn Leu
180 185 190

Gln Ile Gln Asn Thr Ala Ala Gln Gln Ile Thr Leu Thr Pro Val Gln
195 200 205

Thr Leu Thr Leu Gly Gln Val Ala Ala Gly Gly Ala Phe Thr Ser Thr
210 215 220

Pro Val Ser Leu Ser Thr Gly Gln Leu Pro Asn Leu Gln Thr Val Thr
225 230 235 240

Val Asn Ser Ile Asp Ser Ala Gly Ile Gln Leu His Pro Gly Glu Asn
245 250 255

Ala Asp Ser Pro Ala Asp Ile Arg Ile Lys Glu Glu Glu Pro Asp Pro
260 265 270

Glu Glu Trp Gln Leu Ser Gly Asp Ser Thr Leu Asn Thr Asn Asp Leu
275 280 285

Thr His Leu Arg Val Gin Val Val Asp Glu Glu Gly Asp Gln Gln His
290 295 300

Gln Glu Gly Lys Arg Leu Arg Arg Val Ala Cys Thr Cys Pro Asn Cys
305 310 315 320

Lys Glu Gly Gly Arg Gly Thr Asn Leu Gly Lys Lys Lys Gln His
325 330 335

Ile Cys His Ile Pro Gly Cys Gly Lys Val Tyr Gly Lys Thr Ser His
340 345 350

Leu Arg Ala His Leu Arg Trp His Ser Gly Glu Arg Pro Phe Val Cys
355 360 365

Asn Trp Met Tyr Cys Gly Lys Arg Phe Thr Arg Ser Asp Glu Leu Gln
370 375 380

Arg His Arg Arg Thr His Thr Gly Glu Lys Lys Phe Val Cys Pro Glu
385 390 395 400

Cys Ser Lys Arg Phe Met Arg Ser Asp His Leu Ala Lys His Ile Lys
405 410 415

Thr His Gln Asn Lys Lys Gly Ile His Ser Ser Ser Thr Val Leu Ala
420 425 430

Ser Val Glu Ala Ala Arg Asp Asp Thr Leu Ile Thr Ala Gly Gly Thr
435 440 445

Thr Leu Ile Leu Ala Lys Ile Gln Gln Gly Ser Val Ser Gly Ile Gly
450 455 460

Thr Val Asn Thr Ser Ala Thr Ser Asn Gln Asp Ile Leu Thr Asn Thr
465 470 475 480

Glu Ile Pro Leu Gln Leu Val Thr Val Ser Gly Asn Glu Thr Met Glu
485 490 495

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1 5 10 15

ctc gcc cgc ctg ccg cct ttt tgt gcg cgt gac act cag ccg tca ccg 97
Leu Ala Arg Leu Pro Pro Phe Cys Ala Arg Asp Thr Gln Pro Ser Pro

20	25	30														
ctc	gtc	ctg	gcc	gtc	acc	tgc	agc	aag	ata	ggg	ccg	cca	tcg	ccg	145	
Leu	Ala	Leu	Leu	Ala	Ala	Thr	Cys	Ser	Lys	Ile	Gly	Pro	Pro	Ser	Pro	
35						40				45						
gac	gac	gac	gag	gag	gag	gag	gac	gcc	gcc	ggg	gcc	ccc	gcc	gcc	193	
Gly	Asp	Asp	Glu	Glu	Glu	Glu	Ala	Ala	Ala	Ala	Gly	Ala	Pro	Ala	Ala	
50			55							60						
gcc	gga	gca	aca	ggt	gat	ttg	gct	tct	gca	cag	tta	gga	gga	gca	cca	241
Ala	Gly	Ala	Thr	Gly	Asp	Leu	Ala	Ser	Ala	Gln	Leu	Gly	Gly	Ala	Pro	
65			70							75			80			
aac	cga	tgg	gag	gtt	ttg	tca	gcc	aca	cct	aca	act	ata	aaa	gat	gaa	289
Asn	Arg	Trp	Glu	Val	Leu	Ser	Ala	Thr	Pro	Thr	Thr	Ile	Lys	Asp	Glu	
85			90									95				
gct	ggt	aat	cta	gtc	cag	att	cca	agt	gct	act	tca	agt	ggg	cag	337	
Ala	Gly	Asn	Leu	Val	Gln	Ile	Pro	Ser	Ala	Ala	Thr	Ser	Ser	Gly	Gln	
100			105								110					
tat	gtt	ctt	ccc	ctt	cag	aat	ttg	cag	aat	caa	caa	ata	ttt	tcc	gtt	385
Tyr	Val	Leu	Pro	Leu	Gln	Asn	Leu	Gln	Asn	Gln	Gln	Ile	Phe	Ser	Val	
115			120									125				
gca	cca	gga	tca	gat	tca	tca	aat	ggt	gca	gtg	tcc	agt	gtt	caa	tat	433
Ala	Pro	Gly	Ser	Asp	Ser	Ser	Asn	Gly	Ala	Val	Ser	Ser	Val	Gln	Tyr	
130			135							140						
caa	gtg	ata	cca	cag	atc	cag	tca	gca	gat	ggt	cag	cag	gtt	caa	att	481
Gln	Val	Ile	Pro	Gln	Ile	Gln	Ser	Ala	Asp	Gly	Gln	Gln	Val	Gln	Ile	
145			150							155			160			
ggt	ttc	aca	ggc	tct	tca	gat	aat	ggg	ggt	ata	aat	caa	gaa	agc	agt	529
Gly	Phe	Thr	Gly	Ser	Ser	Asp	Asn	Gly	Gly	Ile	Asn	Gln	Glu	Ser	Ser	
165			170									175				
caa	att	cag	atc	att	cct	ggc	tct	aat	caa	acc	tta	ctt	gcc	tct	gga	577
Gln	Ile	Gln	Ile	Ile	Pro	Gly	Ser	Asn	Gln	Thr	Leu	Leu	Ala	Ser	Gly	
180			185								190					
aca	cct	tct	gct	aac	atc	cag	aat	ctc	ata	cca	cag	act	ggt	caa	gtc	625
Thr	Pro	Ser	Ala	Asn	Ile	Gln	Asn	Leu	Ile	Pro	Gln	Thr	Gly	Gln	Val	
195			200								205					
cag	gtt	cag	gga	gtt	gca	att	ggt	ggt	tca	tct	ttt	cct	ggt	caa	acc	673
Gln	Val	Gln	Gly	Val	Ala	Ile	Gly	Gly	Ser	Ser	Phe	Pro	Gly	Gln	Thr	
210			215								220					
caa	gta	gtt	gct	aat	gtg	cct	ctt	ggt	ctg	cca	gga	aat	att	acg	ttt	721
Gln	Val	Val	Ala	Asn	Val	Pro	Leu	Gly	Leu	Pro	Gly	Asn	Ile	Thr	Phe	
225			230							235			240			
gta	cca	atc	aat	agt	gtc	gat	cta	gat	tct	ttg	gga	ctc	tcg	ggc	agt	769
Val	Pro	Ile	Asn	Ser	Val	Asp	Leu	Asp	Ser	Leu	Gly	Leu	Ser	Gly	Ser	
245			250								255					
tct	cag	aca	atg	act	gca	ggc	att	aat	gcc	gac	gga	cat	ttg	ata	aac	817
Ser	Gln	Thr	Met	Thr	Ala	Gly	Ile	Asn	Ala	Asp	Gly	His	Leu	Ile	Asn	
260			265									270				
aca	qga	caa	gct	atg	gat	agt	tca	gac	aat	tca	gaa	agg	act	ggt	gag	865
Thr	Gly	Gln	Ala	Met	Asp	Ser	Ser	Asp	Asn	Ser	Glu	Arg	Thr	Gly	Glu	

275	280	285	
ggg gtt tct cct gat att aat gaa act aat act gat aca gat tta ttt Arg Val Ser Pro Asp Ile Asn Glu Thr Asn Thr Asp Thr Asp Leu Phe 290	295	300	913
gtg cca aca tcc tct tca tca cag ttg cct gtt acg ata gat agt aca Val Pro Thr Ser Ser Ser Gln Leu Pro Val Thr Ile Asp Ser Thr 305	310	315	961
ggt ata tta caa caa aac aca aat agc ttg act aca tct agt ggg cag Gly Ile Leu Gln Gln Asn Thr Asn Ser Leu Thr Thr Ser Ser Gly Gln 325	330	335	1009
gtt cat tct tca gat ctt cag gga aat tat atc cag tcg cct gtt tct Val His Ser Ser Asp Leu Gln Gly Asn Tyr Ile Gln Ser Pro Val Ser 340	345	350	1057
gaa gag aca cag gca cag aat att cag gtt tct aca gca cag cct gtt Glu Glu Thr Gln Ala Gln Asn Ile Gln Val Ser Thr Ala Gln Pro Val 355	360	365	1105
gta cag cat cta caa ctt caa gag tct cag cag cca acc agt caa gcc Val Gln His Leu Gln Leu Gln Glu Ser Gln Gln Pro Thr Ser Gln Ala 370	375	380	1153
caa att gtg caa ggt att aca cca cag aca atc cat ggt gtg caa gcc Gln Ile Val Gln Gly Ile Thr Pro Gln Thr Ile His Gly Val Gln Ala 385	390	395	1201
agt ggt caa aat ata tca caa cag gct ttg caa aat ctt cag ttg cag Ser Gly Gln Asn Ile Ser Gln Gln Ala Leu Gln Asn Leu Gln Leu Gln 405	410	415	1249
ctg aat cct gga acc ttt tta att cag gca cag aca gtc acc cct tct Leu Asn Pro Gly Thr Phe Leu Ile Gln Ala Gln Thr Val Thr Pro Ser 420	425	430	1297
gga cag gta act tgg caa acg ttt caa gta caa ggg gtc cag aac ttg Gly Gln Val Thr Trp Gln Thr Phe Gln Val Gln Gly Val Gln Asn Leu 435	440	445	1345
cag aat ttg caa ata cag aat act gct gcc caa caa ata act ttg acg Gln Asn Leu Gln Ile Gln Asn Thr Ala Ala Gln Gln Ile Thr Leu Thr 450	455	460	1393
cct gtt caa acc ctc aca ctt ggt caa gtt gcg gca ggt gga gcc ttc Pro Val Gln Thr Leu Thr Leu Gly Gln Val Ala Ala Gly Gly Ala Phe 465	470	475	1441
act tca act cca gtt agt cta agc act ggt cag ttg cca aat cta caa Thr Ser Thr Pro Val Ser Leu Ser Thr Gly Gln Leu Pro Asn Leu Gln 485	490	495	1489
aca gtt aca gtg aac tct ata gat tct gct ggt ata cag cta cat cca Thr Val Thr Val Asn Ser Ile Asp Ser Ala Gly Ile Gln Leu His Pro 500	505	510	1537
gga gag aat gct gac agt cct gca gat att agg atc aag gaa gaa gaa Gly Glu Asn Ala Asp Ser Pro Ala Asp Ile Arg Ile Lys Glu Glu Glu 515	520	525	1585
cct gat cct gaa gag tgg cag ctc agt ggt gat tct acc ttg aat acc Pro Asp Pro Glu Glu Trp Gln Leu Ser Gly Asp Ser Thr Leu Asn Thr			1633

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<213> Homo sapiens

<400> 10

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Leu Ala Arg Leu Pro Pro Phe Cys Ala Arg Asp Thr Gln Pro Ser Pro
20 25 30

Ile Ala Leu Leu Ala Ala Thr Cys Ser Lys Ile Gly Pro Pro Ser Pro
35 40 45

Gly Asp Asp Glu Glu Glu Ala Ala Ala Ala Ala Gly Ala Pro Ala Ala
50 55 60

Ala Gly Ala Thr Gly Asp Leu Ala Ser Ala Gln Leu Gly Gly Ala Pro
60 70 75 80

Asn Arg Trp Glu Val Leu Ser Ala Thr Pro Thr Thr Ile Lys Asp Glu
85 90 95

Ala Gly Asn Leu Val Gln Ile Pro Ser Ala Ala Thr Ser Ser Gly Gln
100 105 110

Tyr Val Leu Pro Leu Gln Asn Leu Gln Asn Gln Gln Ile Phe Ser Val
115 120 125

Ala Pro Gly Ser Asp Ser Ser Asn Gly Ala Val Ser Ser Val Gln Tyr
130 135 140

Gln Val Ile Pro Gln Ile Gln Ser Ala Asp Gly Gln Gln Val Gln Ile
145 150 155 160

Gly Phe Thr Gly Ser Ser Asp Asn Gly Gly Ile Asn Gln Glu Ser Ser
165 170 175

Gln Ile Gln Ile Ile Pro Gly Ser Asn Gln Thr Leu Leu Ala Ser Gly
180 185 190

Thr Pro Ser Ala Asn Ile Gln Asn Leu Ile Pro Gln Thr Gly Gln Val
195 200 205

Gln Val Gln Gly Val Ala Ile Gly Gly Ser Ser Phe Pro Gly Gln Thr
210 215 220

Gln Val Val Ala Asn Val Pro Leu Gly Leu Pro Gly Asn Ile Thr Phe
225 230 235 240

Val Pro Ile Asn Ser Val Asp Leu Asp Ser Leu Gly Leu Ser Gly Ser
245 250 255

Ser Gln Thr Met Thr Ala Gly Ile Asn Ala Asp Gly His Leu Ile Asn
260 265 270

Thr Gly Gln Ala Met Asp Ser Ser Asp Asn Ser Glu Arg Thr Gly Glu
275 280 285

Arg Val Ser Pro Asp Ile Asn Glu Thr Asn Thr Asp Thr Asp Leu Phe
290 295 300

Val Frc Thr Ser Ser Ser Gln Leu Pro Val Thr Ile Asp Ser Thr
305 310 315 320

Gly Ile Leu Gln Gln Asn Thr Asn Ser Leu Thr Thr Ser Ser Gly Gln
325 330 335

Val His Ser Ser Asp Leu Gln Gly Asn Tyr Ile Gln Ser Pro Val Ser
340 345 350

Glu Glu Thr Gln Ala Gln Asn Ile Gln Val Ser Thr Ala Gln Pro Val
355 360 365

Val Gln His Leu Gln Leu Gln Glu Ser Gln Gln Pro Thr Ser Gln Ala
370 375 380

Gln Ile Val Gln Gly Ile Thr Pro Gln Thr Ile His Gly Val Gln Ala
385 390 395 400

Ser Gly Gln Asn Ile Ser Gln Gln Ala Leu Gln Asn Leu Gln Leu Gln
405 410 415

Leu Asn Pro Gly Thr Phe Leu Ile Gln Ala Gln Thr Val Thr Pro Ser
420 425 430

Gly Gln Val Thr Trp Gln Thr Phe Gln Val Gln Gly Val Gln Asn Leu
435 440 445

Gln Asn Leu Gln Ile Gln Asn Thr Ala Ala Gln Ile Thr Leu Thr
450 455 460

Pro Val Gln Thr Leu Thr Leu Gly Gln Val Ala Ala Gly Gly Ala Phe
465 470 475 480

Thr Ser Thr Pro Val Ser Leu Ser Thr Gly Gln Leu Pro Asn Leu Gln
485 490 495

Thr Val Thr Val Asn Ser Ile Asp Ser Ala Gly Ile Gln Leu His Pro
500 505 510

Gly Glu Asn Ala Asp Ser Pro Ala Asp Ile Arg Ile Lys Glu Glu Glu
515 520 525

Pro Asp Pro Glu Glu Trp Gln Leu Ser Gly Asp Ser Thr Leu Asn Thr
530 535 540

Asn Asp Leu Thr His Leu Arg Val Gln Val Val Asp Glu Glu Gly Asp
545 550 555 560

Gln Gln His Gln Glu Gly Lys Arg Leu Arg Arg Val Ala Cys Thr Cys
565 570 575

Pro Asn Cys Lys Glu Gly Gly Arg Gly Thr Asn Leu Gly Lys Lys
580 585 590

Lys Gin His Ile Cys His Ile Pro Gly Cys Gly Lys Val Tyr Gly Lys
595 600 605

Thr Ser His Leu Arg Ala His Leu Arg Trp His Ser Gly Glu Arg Pro
610 615 620

Phe Val Cys Asn Trp Met Tyr Cys Gly Lys Arg Phe Thr Arg Ser Asp
625 630 635 640

Glu Leu Gln Arg His Arg Arg Thr His Thr Gly Glu Lys Lys Phe Val
645 650 655

Cys Pro Glu Cys Ser Lys Arg Phe Met Arg Ser Asp His Leu Ala Lys
660 665 670

His Ile Lys Thr His Gln Asn Lys Lys Gly Ile His Ser Ser Ser Thr
675 680 685

Val Leu Ala Ser Val Glu Ala Ala Arg Asp Asp Thr Leu Ile Thr Ala
690 695 700

Gly Gly Thr Thr Leu Ile Leu Ala Lys Ile Gln Gln Gly Ser Val Ser
705 710 715 720

Gly Ile Gly Thr Val Asn Thr Ser Ala Thr Ser Asn Gln Asp Ile Leu
725 730 735

Thr Asn Thr Glu Ile Pro Leu Gln Leu Val Thr Val Ser Gly Asn Glu
740 745 750

Thr Met Glu
755

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<213> Homo sapiens

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<222> (57)..(1001)
<223>

<400> 11
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Met

gac ctg cga cag ttt ctt atg tgc ctg tcc ctg tgc aca gcc ttt gcc Asp Leu Arg Gln Phe Leu Met Cys Leu Ser Leu Cys Thr Ala Phe Ala 5 10 15	107
tta agc aaa ccc aca gaa aag aag gac cgt gta cat cat gag cct cag Leu Ser Lys Pro Thr Glu Lys Lys Asp Arg Val His His Glu Pro Gln 20 25 30	155
ctc agt gac aag gtt cac aat gat gct cag agt ttt gat tat gac cat Leu Ser Asp Lys Val His Asn Asp Ala Gln Ser Phe Asp Tyr Asp His 35 40 45	203
gat gcc ttc ttg ggt gct gaa gaa gca aag acc ttt gat cag ctg aca Asp Ala Phe Leu Gly Ala Glu Glu Ala Lys Thr Phe Asp Gln Leu Thr 50 55 60 65	251
cca gaa gag agc aag gaa agg ctt gga atg att gta gat aaa ata gac Pro Glu Glu Ser Lys Glu Arg Leu Gly Met Ile Val Asp Lys Ile Asp 70 75 80	299
gcg gat aaa gat ggg ttt gtg acg gag ggg gag ctg aaa tcc tgg att Ala Asp Lys Asp Gly Phe Val Thr Glu Gly Glu Leu Lys Ser Trp Ile 85 90 95	347
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cag gag ttt gat atg aat caa gac ggc tta atc tcc tgg gat gag tac Gln Glu Phe Asp Met Asn Gln Asp Gly Leu Ile Ser Trp Asp Glu Tyr 115 120 125	443
aga aac gtg act tat ggc act tac ctg gat gat cca gat cct gat gat Arg Asn Val Thr Tyr Gly Thr Tyr Leu Asp Asp Pro Asp Pro Asp Asp 130 135 140 145	491
gga ttt aac tat aaa cag atg atg gtt aga gat gag cgg agg ttt aaa Gly Phe Asn Tyr Lys Gln Met Met Val Arg Asp Glu Arg Arg Phe Lys 150 155 160	539
atg gca gac aag gat gga gac ctc att gcc acc aag gag gag ttc aca Met Ala Asp Lys Asp Gly Asp Leu Ile Ala Thr Lys Glu Glu Phe Thr 165 170 175	587
gct ttc ctg cac cct gag gag tat gac tac atg aaa gat ata gta gta Ala Phe Leu His Pro Glu Glu Tyr Asp Tyr Met Lys Asp Ile Val Val 180 185 190	635
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cta gaa gag tat att ggt gac atg tac agc cat gat ggg aat act gat Leu Glu Glu Tyr Ile Gly Asp Met Tyr Ser His Asp Gly Asn Thr Asp 210 215 220 225	731
gag cca gaa tgg gta aag aca gag cga gag cag ttt gtt gag ttt cg Glu Pro Glu Trp Val Lys Thr Glu Arg Glu Gln Phe Val Glu Phe Arg 230 235 240	779
gat aag aac cgt gat ggg aag atg gac aag gaa gag acc aaa gac tgg Asp Lys Asn Arg Asp Gly Lys Met Asp Lys Glu Glu Thr Lys Asp Trp	827

245	250	255	
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gtc tat gaa tca gac caa aac aag gat ggc aag ctt acc aag gag gag Val Tyr Glu Ser Asp Gln Asn Lys Asp Gly Lys Leu Thr Lys Glu Glu 275	280	285	923
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ggg gag gcc tta gta cg ^g cat gat gag ttc tgagctacgg aggaaccctc Gly Glu Ala Leu Val Arg His Asp Glu Phe 310	315		1021
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			1201
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			1321
			1381
			1441
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			1561
			1621
			1681
			1741
			1801
			1861
			1921
			1981
			2041
			2101
			2161
			2221
			2281
			2341
			2401

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 <212> PRT
 <213> Homo sapiens

<400> 12

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			20				25				30			

Gln	Leu	Ser	Asp	Lys	Val	His	Asn	Asp	Ala	Gln	Ser	Phe	Asp	Tyr	Asp
			35			40				45					

His	Asp	Ala	Phe	Leu	Gly	Ala	Glu	Glu	Ala	Lys	Thr	Phe	Asp	Gln	Leu
	50				55				60						

Thr	Pro	Glu	Glu	Ser	Lys	Glu	Arg	Leu	Gly	Met	Ile	Val	Asp	Lys	Ile
65				70				75				80			

Asp	Ala	Asp	Lys	Asp	Gly	Phe	Val	Thr	Glu	Gly	Glu	Leu	Lys	Ser	Trp
			85				90					95			

Ile Lys His Ala Gln Lys Lys Tyr Ile Tyr Asp Asn Val Glu Asn Gln
100 105 110

Trp Gln Glu Phe Asp Met Asn Gln Asp Gly Leu Ile Ser Trp Asp Glu
115 120 125

Tyr Arg Asn Val Thr Tyr Gly Thr Tyr Leu Asp Asp Pro Asp Pro Asp
130 135 140

Asp Gly Phe Asn Tyr Lys Gln Met Met Val Arg Asp Glu Arg Arg Phe
145 150 155 160

Lys Met Ala Asp Lys Asp Gly Asp Leu Ile Ala Thr Lys Glu Glu Phe
165 170 175

Thr Ala Phe Leu His Pro Glu Glu Tyr Asp Tyr Met Lys Asp Ile Val
180 185 190

Val Gln Glu Thr Met Glu Asp Ile Asp Lys Asn Ala Asp Gly Phe Ile
195 200 205

Asp Leu Glu Glu Tyr Ile Gly Asp Met Tyr Ser His Asp Gly Asn Thr
210 215 220

Asp Glu Pro Glu Trp Val Lys Thr Glu Arg Glu Gln Phe Val Glu Phe
225 230 235 240

Arg Asp Lys Asn Arg Asp Gly Lys Met Asp Lys Glu Glu Thr Lys Asp
245 250 255

Trp Ile Leu Pro Ser Asp Tyr Asp His Ala Glu Ala Glu Ala Arg His
260 265 270

Leu Val Tyr Glu Ser Asp Gln Asn Lys Asp Gly Lys Leu Thr Lys Glu
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Phe Gly Glu Ala Leu Val Arg His Asp Glu Phe
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agcgccagcg tgtgcgcctt ggtggcgaaa gtgggtctgg ctcagtacat attcaccttg 180
aagaggaaga cggggccgaa gaccaagatc atcgagatga agattggata accaagaa 238
atg act aat caa gag tct gcc gta cat gtg aaa atg atg cca gaa ttc 286
Met Thr Asn Gln Glu Ser Ala Val His Val Lys Met Met Pro Glu Phe
1 5 10 15
cag aaa agt tca gtt cga atc aag aac cct aca aga gta gaa gaa att 334
Gln Lys Ser Ser Val Arg Ile Lys Asn Pro Thr Arg Val Glu Glu Ile
20 25 30
atc tgt ggt ctt atc aaa gga gga gct gcc aaa ctt cag ata ata acg 382
Ile Cys Gly Leu Ile Lys Gly Gly Ala Ala Lys Leu Gln Ile Ile Thr
35 40 45
gac ttt gat atg aca ctc agt aga ttt tca tat aaa ggg aaa aga tgc 430
Asp Phe Asp Met Thr Leu Ser Arg Phe Ser Tyr Lys Gly Lys Arg Cys
50 55 60
cca aca tgt cat aat atc att gac aac tgt aag ctg gtt aca gat gaa 478
Pro Thr Cys His Asn Ile Ile Asp Asn Cys Lys Leu Val Thr Asp Glu
65 70 75 80
tgt aga aaa aag tta ttgcaa cta aag gaa aaa tac tac gct att gaa 526
Cys Arg Lys Lys Leu Leu Gln Leu Lys Glu Lys Tyr Tyr Ala Ile Glu
85 90 95
gtt gat cct gtt ctt act gta gaa gag aag tac cct tat atg gtg gaa 574
Val Asp Pro Val Leu Thr Val Glu Glu Lys Tyr Pro Tyr Met Val Glu
100 105 110
tgg tat act aaa tca cat ggt ttgtt gtt cag caa gct tta cca aaa 622
Trp Tyr Lys Ser His Gly Leu Leu Val Gln Gln Ala Leu Pro Lys
115 120 125
gct aaa ctt aaa gaa att gtg gca gaa tct gac gtt atg ctc aaa gaa 670
Ala Lys Leu Lys Glu Ile Val Ala Glu Ser Asp Val Met Leu Lys Glu
130 135 140
gga tat gag aat ttc ttt gat aag ctc caa caa cat agc atc ccc gtg 718
Gly Tyr Glu Asn Phe Phe Asp Lys Leu Gln Gln His Ser Ile Pro Val
145 150 155 160
ttc ata ttt tcg gct gga atc ggc gat gta cta gag gaa gtt att cgt 766
Phe Ile Phe Ser Ala Gly Ile Gly Asp Val Leu Glu Glu Val Ile Arg
165 170 175
caa gct ggt gtt tat cat ccc aat gtc aaa gtt gtg tcc aat ttt atg 814
Gln Ala Gly Val Tyr His Pro Asn Val Lys Val Val Ser Asn Phe Met
180 185 190
gat ttt gat gaa act ggg gtg ctc aaa gga ttt aaa gga gaa cta att 862
Asp Phe Asp Glu Thr Gly Val Leu Lys Gly Phe Lys Gly Glu Leu Ile
195 200 205

cat gta ttt aac aaa cat gat ggt gcc ttg agg aat aca gaa tat ttc	910
His Val Phe Asn Lys His Asp Gly Ala Leu Arg Asn Thr Glu Tyr Phe	
210 215 220	
 aat caa cta aaa gac aat agt aac ata att ctt ctg gga gac tcc caa	958
Asn Gln Leu Lys Asp Asn Ser Asn Ile Ile Leu Leu Gly Asp Ser Gln	
225 230 235 240	
 gga gac tta aga atg gca gat gga gtg gcc aat gtt gag cac att ctg	1006
Gly Asp Leu Arg Met Ala Asp Gly Val Ala Asn Val Glu His Ile Leu	
245 250 255	
 aaa att gga tat cta aat gat aga gtg gat gag ctt tta gaa aag tac	1054
Lys Ile Gly Tyr Leu Asn Asp Arg Val Asp Glu Leu Leu Glu Lys Tyr	
260 265 270	
 atg gac tct tat gat att gtt tta gta caa gat gaa tca tta gaa gta	1102
Met Asp Ser Tyr Asp Ile Val Leu Val Gln Asp Glu Ser Leu Glu Val	
275 280 285	
 gcc aac tct att tta cag aag att cta taaacaagca ttctccaaga	1149
Ala Asn Ser Ile Leu Gln Lys Ile Leu	
290 295	
 agacctctct cctgtgggtg caattgaact gttcatccgt tcatcttgct gagagactta	1209
tttataatat atccttactc tcgaagtgtt ccctttgtat aactgaagta ttttcagata	1269
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ggaaagttt tagaaatttt aaaataagtt ttatgaaatg gtgaaataat atgcatgatt	1509
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<400> 14

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Gln Lys Ser Ser Val Arg Ile Lys Asn Pro Thr Arg Val Glu Glu Ile	
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Ile Cys Gly Leu Ile Lys Gly Gly Ala Ala Lys Leu Gln Ile Ile Thr	
35 40 45	

Asp Phe Asp Met Thr Leu Ser Arg Phe Ser Tyr Lys Gly Lys Arg Cys
50 55 60

Pro Thr Cys His Asn Ile Ile Asp Asn Cys Lys Leu Val Thr Asp Glu
65 70 75 80

Cys Arg Lys Lys Leu Leu Gln Leu Lys Glu Lys Tyr Tyr Ala Ile Glu
85 90 95

Val Asp Pro Val Leu Thr Val Glu Glu Lys Tyr Pro Tyr Met Val Glu
100 105 110

Trp Tyr Thr Lys Ser His Gly Leu Leu Val Gln Gln Ala Leu Pro Lys
115 120 125

Ala Lys Leu Lys Glu Ile Val Ala Glu Ser Asp Val Met Leu Lys Glu
130 135 140

Gly Tyr Glu Asn Phe Phe Asp Lys Leu Gln Gln His Ser Ile Pro Val
145 150 155 160

Phe Ile Phe Ser Ala Gly Ile Gly Asp Val Leu Glu Glu Val Ile Arg
165 170 175

Gln Ala Gly Val Tyr His Pro Asn Val Lys Val Val Ser Asn Phe Met
180 185 190

Asp Phe Asp Glu Thr Gly Val Leu Lys Gly Phe Lys Gly Glu Leu Ile
195 200 205

His Val Phe Asn Lys His Asp Gly Ala Leu Arg Asn Thr Glu Tyr Phe
210 215 220

Asn Gln Leu Lys Asp Asn Ser Asn Ile Ile Leu Leu Gly Asp Ser Gln
225 230 235 240

Gly Asp Leu Arg Met Ala Asp Gly Val Ala Asn Val Glu His Ile Leu
245 250 255

Lys Ile Gly Tyr Leu Asn Asp Arg Val Asp Glu Leu Leu Glu Lys Tyr
260 265 270

Met Asp Ser Tyr Asp Ile Val Leu Val Gln Asp Glu Ser Leu Glu Val
275 280 285

Ala Asn Ser Ile Leu Gln Lys Ile Leu
290 295

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Ala Leu Gly Leu Glu Gln Ala Glu Glu Gln Arg Leu Tyr Gln Gln Thr		
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atc ctg caa gac ggg ctc aaa gac atg ctg gac cat ggc aag ttc ctc		154
Leu Leu Gln Asp Gly Leu Lys Asp Met Leu Asp His Gly Lys Phe Leu		
20	25	30
gac tgt gtg gtg cgg ggc gag cgc gag ttc ccgtgc cat cgc ctg		202
Asp Cys Val Val Arg Ala Gly Glu Arg Glu Phe Pro Cys His Arg Leu		
35	40	45
gtg ctg gcc gcc tgc agc ccc tac ttc cgg gcg cgc ttt cta gcc gag		250
Val Leu Ala Ala Cys Ser Pro Tyr Phe Arg Ala Arg Phe Leu Ala Glu		
50	55	60
65		
ccg gag cgc ggc gag ctg cac ctg gag gag gtgttcc ccg gac gtg		298
Pro Glu Arg Ala Gly Glu Leu His Leu Glu Glu Val Ser Pro Asp Val		
70	75	80
gtg gcc cag gtg ctg cac tac ctg tac aca tca gag atc gcg ctg gat		346
Val Ala Gln Val Leu His Tyr Leu Tyr Thr Ser Glu Ile Ala Leu Asp		
85	90	95
gag gcg agc gtg cag gat ttg ttc gcc gcg gca cac cgc ttc cag atc		394
Glu Ala Ser Val Gln Asp Leu Phe Ala Ala His Arg Phe Gln Ile		
100	105	110
cct tcc atc ttc acc atc tgc gtg tcc ttc ctg cag aag cgc ctg tgc		442
Pro Ser Ile Phe Thr Ile Cys Val Ser Phe Leu Gln Lys Arg Leu Cys		
115	120	125
ctc tcc aac tgc ttg gcc gtc ttc cgt ctc ggc ctc ctg ctc gac tgc		490
Leu Ser Asn Cys Leu Ala Val Phe Arg Leu Gly Leu Leu Leu Asp Cys		
130	135	140
145		
gcg cgt ctc gcc gtg gct gcc cgc gac ttc atc tgc gct cac ttc acg		538
Ala Arg Leu Ala Val Ala Ala Arg Asp Phe Ile Cys Ala His Phe Thr		
150	155	160
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Leu Val Ala Arg Asp Ala Asp Phe Leu Gly Leu Ser Ala Asp Glu Leu		
165	170	175
atc gcc atc atc tcc agc gac ggc ctt aac gtg gag aag gag gag gca		634
Ile Ala Ile Ile Ser Ser Asp Gly Leu Asn Val Glu Lys Glu Glu Ala		
180	185	190

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cct ctc gtg cgt gcc cag ccc gag ttg ctg cgc aag gtc cag atg gtc Pro Leu Val Arg Ala Gln Pro Glu Leu Leu Arg Lys Val Gln Met Val 245 250 255	826
aag gat gca cac gag ggc cgc atc acc acg ctg cgg aag aaa aag aag Lys Asp Ala His Glu Gly Arg Ile Thr Thr Leu Arg Lys Lys Lys Lys 260 265 270	874
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gcc aaa gca gag gag gat gag gag gcc gaa cgt atc ctt cct ggg atc Ala Lys Ala Glu Glu Asp Glu Ala Glu Arg Ile Leu Pro Gly Ile 290 295 300 305	970
ctc aat gac acc ctg cgc ttc ggc atg ttc ctg cag gat ctc atc ttc Leu Asn Asp Thr Leu Arg Phe Gly Met Phe Leu Gln Asp Leu Ile Phe 310 315 320	1018
atg atc agt gag gag ggc gct gtc gcc tac gat cca gca gcc aac gag Met Ile Ser Glu Glu Gly Ala Val Ala Tyr Asp Pro Ala Ala Asn Glu 325 330 335	1066
tgc tac tgt gct tcc ctc tcc agc cag gtc ccc aag aac cac gtc agc Cys Tyr Cys Ala Ser Leu Ser Ser Gln Val Pro Lys Asn His Val Ser 340 345 350	1114
ctg gtt acc aag gag aac cag gtc ttc gtc gct gga ggc ctc ttc tac Leu Val Thr Lys Glu Asn Gln Val Phe Val Ala Gly Gly Leu Phe Tyr 355 360 365	1162
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gta att ggc ggc aaa ggc agt gac agg aag tgc ctg aac aag atg tgc Val Ile Gly Gly Lys Ser Asp Arg Lys Cys Leu Asn Lys Met Cys 470 475 480	1498
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gag cgt agc tca ctc agc ctg gtc agc ctg gtg ggt acc ctc tat gcc Glu Arg Ser Ser Leu Ser Leu Val Ser Leu Val Gly Thr Leu Tyr Ala 550 555 560	1738
att ggt ggc ttt gcc aca ctg gag acg gag tct gga gag ctg gtt ccc Ile Gly Phe Ala Thr Leu Glu Thr Glu Ser Gly Glu Leu Val Pro 565 570 575	1786
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gag ggt gtc ctg cgg gag atc gcc tat gca gca ggt gcc acc ttc cta Glu Gly Val Leu Arg Glu Ile Ala Tyr Ala Ala Gly Ala Thr Phe Leu 595 600 605	1882
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Leu Asp Cys Val Val Arg Ala Gly Glu Arg Glu Phe Pro Cys His Arg
35 40 45

Leu Val Leu Ala Ala Cys Ser Pro Tyr Phe Arg Ala Arg Phe Leu Ala
50 55 60

Glu Pro Glu Arg Ala Gly Glu Leu His Leu Glu Glu Val Ser Pro Asp
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Val Val Ala Gln Val Leu His Tyr Leu Tyr Thr Ser Glu Ile Ala Leu
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Asp Glu Ala Ser Val Gln Asp Leu Phe Ala Ala Ala His Arg Phe Gln
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Ile Pro Ser Ile Phe Thr Ile Cys Val Ser Phe Leu Gln Lys Arg Leu
115 120 125

Cys Leu Ser Asn Cys Leu Ala Val Phe Arg Leu Gly Leu Leu Leu Asp
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Cys Ala Arg Leu Ala Val Ala Ala Arg Asp Phe Ile Cys Ala His Phe
145 150 155 160

Thr Leu Val Ala Arg Asp Ala Asp Phe Leu Gly Leu Ser Ala Asp Glu
165 170 175

Leu Ile Ala Ile Ile Ser Ser Asp Gly Leu Asn Val Glu Lys Glu Glu
180 185 190

Ala Val Phe Glu Ala Val Met Arg Trp Ala Gly Ser Gly Asp Ala Glu
195 200 205

Ala Gln Ala Glu Arg Gln Arg Ala Leu Pro Thr Val Phe Glu Ser Val
210 215 220

Arg Cys Arg Leu Ile Pro Arg Ala Phe Leu Glu Ser Arg Val Glu Arg
225 230 235 240

His Pro Ile Val Arg Ala Gln Pro Glu Leu Leu Arg Lys Val Gln Met
245 250 255

Val Lys Asp Ala His Glu Gly Arg Ile Thr Thr Leu Arg Lys Lys Lys
260 265 270

Lys Gly Lys Asp Gly Ala Gly Ala Lys Glu Ala Asp Lys Gly Thr Ser
275 280 285

Lys Ala Lys Ala Glu Glu Asp Glu Glu Ala Glu Arg Ile Leu Pro Gly
290 295 300

Ile Leu Asn Asp Thr Leu Arg Phe Gly Met Phe Leu Gln Asp Leu Ile
305 310 320

Phe Met Ile Ser Glu Glu Gly Ala Val Ala Tyr Asp Pro Ala Ala Asn
325 330 335

Glu Cys Tyr Cys Ala Ser Leu Ser Ser Gln Val Pro Lys Asn His Val
340 345 350

Ser Leu Val Thr Lys Glu Asn Gln Val Phe Val Ala Gly Gly Leu Phe
355 360 365

Tyr Asn Glu Asp Asn Lys Glu Asp Pro Met Ser Ala Tyr Phe Leu Gln
370 375 380

Phe Asp His Leu Asp Ser Glu Trp Leu Gly Met Pro Pro Leu Pro Ser
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Pro Arg Cys Leu Phe Gly Leu Gly Glu Ala Leu Asn Ser Ile Tyr Val
405 410 415

Val Gly Gly Arg Glu Ile Lys Asp Gly Glu Arg Cys Leu Asp Ser Val
420 425 430

Met Cys Tyr Asp Arg Leu Ser Phe Lys Trp Gly Glu Ser Asp Pro Leu
435 440 445

Pro Tyr Val Val Tyr Gly His Thr Val Leu Ser His Met Asp Leu Val
450 455 460

Tyr Val Ile Gly Gly Lys Gly Ser Asp Arg Lys Cys Leu Asn Lys Met
465 470 475 480

Cys Val Tyr Asp Pro Lys Lys Phe Glu Trp Lys Glu Leu Ala Pro Met
485 490 495

Gln Thr Ala Arg Ser Leu Phe Gly Ala Thr Val His Asp Gly Arg Ile
500 505 510

Ile Val Ala Ala Gly Val Thr Asp Thr Gly Leu Thr Ser Ser Ala Glu
515 520 525

Val Tyr Ser Ile Thr Asp Asn Lys Trp Ala Pro Phe Glu Ala Phe Pro
530 535 540

Gln Glu Arg Ser Ser Leu Ser Leu Val Ser Leu Val Gly Thr Leu Tyr
545 550 555 560

Ala Ile Gly Gly Phe Ala Thr Leu Glu Thr Glu Ser Gly Glu Leu Val
565 570 575

Pro Thr Glu Leu Asn Asp Ile Trp Arg Tyr Asn Glu Glu Glu Lys Lys
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Trp Glu Gly Val Leu Arg Glu Ile Ala Tyr Ala Ala Gly Ala Thr Phe
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acagccgccc ccgacgcctc ctctccggga gccgccttcc ccccgccccg agggcggtgg 180
cgtggggcgc cgggtgcagg cgttctgggg cgccggggcc gcagctcgct ggccatcccg 240
cggctgcgcc ccgcgcctcg ccc atg gct gag ggc cgg cgg gag gac gag 293
Met Ala Glu Gly Arg Arg Arg Glu Asp Glu
1 5 10

gag gaa gag cta cgc gag cgc cgc gaa ctt ggt ggc cag cgc cgc gcc 341
Glu Glu Leu Arg Glu Arg Arg Glu Leu Gly Gly Gln Arg Arg Ala
15 20 25

cgg ggc cgt gcg ctc tcg ggc cac tcg gcc gca gat cgc aac gaa cga 389
Arg Gly Arg Ala Leu Ser Gly His Ser Ala Ala Asp Arg Asn Glu Arg
30 35 40

aat aaa cca gaa cat cgt tct tca agc caa gga ccc ttg tca tcc att		437	
Asn Lys Pro Glu His Arg Ser Ser Ser Gln Gly Pro Leu Ser Ser Ile			
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aga gcg gta atc aag aga tct tct cgg act tct att cag agt gaa ctt		485	
Arg Ala Val Ile Lys Arg Ser Ser Arg Thr Ser Ile Gln Ser Glu Leu			
60	65	70	
cat cga gat aga agg cgc cca gag atc acc att gtg gca gct gag cca		533	
His Arg Asp Arg Arg Pro Glu Ile Thr Ile Val Ala Ala Glu Pro			
75	80	85	90
ctg agg cca gcc tcg tgg ttt cca gga acc cca ccc cca gga ctg gga		581	
Leu Arg Pro Ala Ser Trp Phe Pro Gly Thr Pro Pro Pro Gly Leu Gly			
95	100	105	
ttt cct aca tca tct gca gca ggc tct tgg agg cct aat gag ctg gtt		629	
Phe Pro Thr Ser Ala Ala Gly Ser Trp Arg Pro Asn Glu Leu Val			
110	115	120	
cct gct gag ctc cca cca tct tat gaa caa gtt ata aaa gaa atc aac		677	
Pro Ala Glu Leu Pro Pro Ser Tyr Glu Gln Val Ile Lys Glu Ile Asn			
125	130	135	
caa gtt caa gtt aat act aca aat aat aat gct gct gct act cca		725	
Gln Val Gln Val Asn Thr Thr Asn Asn Asn Ala Ala Ala Thr Pro			
140	145	150	
agg cac act att act tct gca act cag act gac ttt tca gaa gaa ata		773	
Arg His Thr Ile Thr Ser Ala Thr Gln Thr Asp Phe Ser Glu Glu Ile			
155	160	165	170
gac aac gat ctg cct caa aca cta cag gca cct ctc aag cct ctt cag		821	
Asp Asn Asp Leu Pro Gln Thr Leu Gln Ala Pro Leu Lys Pro Leu Gln			
175	180	185	
cct ttc tca gca gtc tcg tct ggc aat ctt cca aca aat gtg gca cct		869	
Pro Phe Ser Ala Val Ser Ser Gly Asn Leu Pro Thr Asn Val Ala Pro			
190	195	200	
tta atc gtc ttt gat att tct gaa gaa ccg aat tgt cca gaa aac ccc		917	
Leu Ile Val Phe Asp Ile Ser Glu Glu Pro Asn Cys Pro Glu Asn Pro			
205	210	215	
agt gct aca aga tgt cca gtg cca aaa cca aga tca aaa agc aac ctc		965	
Ser Ala Thr Arg Cys Pro Val Pro Lys Pro Arg Ser Lys Ser Asn Leu			
220	225	230	
aga cca ata ccc aga gat tct cac att aaa gag caa agt caa cag aaa		1013	
Arg Pro Ile Pro Arg Asp Ser His Ile Lys Glu Gln Ser Gln Gln Lys			
235	240	245	250
atc agc cca gca gcc gta gga gag gag tca tcc cca ggc cgg ccc cag		1061	
Ile Ser Pro Ala Ala Val Gly Glu Glu Ser Ser Pro Gly Arg Pro Gln			
255	260	265	
tct ctg ctg gac aac gct agc acc tca gac agt cag gca gtg atg aac		1109	
Ser Leu Leu Asp Asn Ala Ser Thr Ser Asp Ser Gln Ala Val Met Asn			
273	275	280	
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Ile Met Asn Thr Glu Gln Ser Gln Asn Ser Ile Val Ser Arg Ile Lys			
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gtc ttt gag ggt cag aca aac ata gaa acc tca gga ctg ccc aag aaa Val Glu Gly Gln Thr Asn Ile Glu Thr Ser Gly Leu Pro Lys Lys 305 310	1205
cct gaa att act cca cgt tca ctt cct cca aag cct act gtt tcc tca Pro Glu Ile Thr Pro Arg Ser Leu Pro Pro Lys Pro Thr Val Ser Ser 315 320 325 330	1253
ggg aaa cct tct gta gct ccc aaa cca gct gct aac aga gct tct gga Gly Lys Pro Ser Val Ala Pro Lys Pro Ala Ala Asn Arg Ala Ser Gly 335 340 345	1301
gag tgg gac tct ggg act gag aac aga ctc aag gtg acc tcc aag gaa Glu Trp Asp Ser Gly Thr Glu Asn Arg Leu Lys Val Thr Ser Lys Glu 350 355 360	1349
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acc aaa cct gaa ttg cca aag aaa cca aac cct ggc ctt ata cga agt Thr Lys Pro Glu Leu Pro Lys Lys Pro Asn Pro Gly Leu Ile Arg Ser 380 385 390	1445
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ctg cag agc aag ccc ttg gtg gac atc gat ctc atc agc ttt gat gat Leu Gin Ser Lys Pro Leu Val Asp Ile Asp Leu Ile Ser Phe Asp Asp 475 480 485 490	1733
gat gtt ttg ccc acc cca tcg ggg aac ctg gct gaa gaa tct gtt ggt Asp Val Leu Pro Thr Pro Ser Gly Asn Leu Ala Glu Glu Ser Val Gly 495 500 505	1781
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gcc aag agt caa gtt ttt aaa aat caa gat ccg gtg cta ccc cct cgt Ala Lys Ser Gln Val Phe Lys Asn Gln Asp Pro Val Leu Pro Pro Arg 670 675 680	2309
ccc aaa cca gga cac cct ctc tac agt aaa tac atg ctg tct gtg cct Pro Lys Pro Gly His Pro Leu Tyr Ser Lys Tyr Met Leu Ser Val Pro 685 690 695	2357
cat gga att gcc aat gaa gat att gtc tct caa aac ccc gga gaa ctc His Gly Ile Ala Asn Glu Asp Ile Val Ser Gln Asn Pro Gly Glu Leu 700 705 710	2405
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aat tac ttg gag tgc caa aag gga gaa gac act ggc aga gtt cac ctg Asn Tyr Leu Glu Cys Gln Lys Gly Glu Asp Thr Gly Arg Val His Leu 735 740 745	2501
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gat tgg tac aga ggg aac tgt aga aac cag att ggc ata ttt cct gcc Asp Trp Tyr Arg Gly Asn Cys Arg Asn Gln Ile Gly Ile Phe Pro Ala	815 820 825	2741
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cgg ttt gaa tat att gga gag cag aag gat gag ttg agt ttc tca gag Arg Phe Glu Tyr Ile Gly Glu Gln Lys Asp Glu Leu Ser Phe Ser Glu	860 865 870	2885
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cct gtt gag gat tat ccc acc tct ggt gca aat gtt tta agc aca aag Pro Val Glu Asp Tyr Pro Thr Ser Gly Ala Asn Val Leu Ser Thr Lys	910 915 920	3029
gta cca ctg aaa acc aaa aaa gaa gat tct ggc tca aac tct cag gtt Val Pro Leu Lys Thr Lys Lys Glu Asp Ser Gly Ser Asn Ser Gln Val	925 930 935	3077
aac agt ctt ccg gca gaa tgg tgt gaa gct ctt cac agt ttt aca gca Asn Ser Leu Pro Ala Glu Trp Cys Glu Ala Leu His Ser Phe Thr Ala	940 945 950	3125
gag acc agt gat gac tta tca ttc aag agg gga gac cgg atc cag att Glu Thr Ser Asp Asp Leu Ser Phe Lys Arg Gly Asp Arg Ile Gln Ile	955 960 965 970	3173
ctg gaa cgt ctg gat tct gac tgg tgc agg ggc aga ctg cag gac agg Leu Glu Arg Leu Asp Ser Asp Trp Cys Arg Gly Arg Leu Gln Asp Arg	975 980 985	3221
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Ser Ser Ser Gln Gly Pro Leu Ser Ser Ile Arg Ala Val Ile Lys Arg
50 55 60

Ser Ser Arg Thr Ser Ile Gln Ser Glu Leu His Arg Asp Arg Arg Arg
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Pro Glu Ile Thr Ile Val Ala Ala Glu Pro Leu Arg Pro Ala Ser Trp
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Phe Pro Gly Thr Pro Pro Pro Gly Leu Gly Phe Pro Thr Ser Ser Ala
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Ala Gly Ser Trp Arg Pro Asn Glu Leu Val Pro Ala Glu Leu Pro Pro
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Thr Asn Asn Asn Asn Ala Ala Ala Thr Pro Arg His Thr Ile Thr Ser
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Ala Thr Gln Thr Asp Phe Ser Glu Glu Ile Asp Asn Asp Leu Pro Gln
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Thr Leu Gln Ala Pro Leu Lys Pro Leu Gln Pro Phe Ser Ala Val Ser
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Ser Gly Asn Leu Pro Thr Asn Val Ala Pro Leu Ile Val Phe Asp Ile
195 200 205

Ser Glu Glu Pro Asn Cys Pro Glu Asn Pro Ser Ala Thr Arg Cys Pro
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Val Pro Lys Pro Arg Ser Lys Ser Asn Leu Arg Pro Ile Pro Arg Asp
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Ser His Ile Lys Glu Gln Ser Gln Gln Lys Ile Ser Pro Ala Ala Val
245 250 255

Gly Glu Glu Ser Ser Pro Gly Arg Pro Gln Ser Leu Leu Asp Asn Ala
260 265 270

Ser Thr Ser Asp Ser Gln Ala Val Met Asn Ile Met Asn Thr Glu Gln
275 280 285

Ser Gln Asn Ser Ile Val Ser Arg Ile Lys Val Phe Glu Gly Gln Thr
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Asn Ile Glu Thr Ser Gly Leu Pro Lys Lys Pro Glu Ile Thr Pro Arg
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Ser Leu Pro Pro Lys Pro Thr Val Ser Ser Gly Lys Pro Ser Val Ala
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Pro Lys Pro Ala Ala Asn Arg Ala Ser Gly Glu Trp Asp Ser Gly Thr
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Glu Asn Arg Leu Lys Val Thr Ser Lys Glu Gly Leu Thr Pro Tyr Pro
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Pro Leu Gln Glu Ala Gly Ser Ile Pro Val Thr Lys Pro Glu Leu Pro
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Lys Lys Pro Asn Pro Gly Leu Ile Arg Ser Val Asn Pro Glu Ile Pro
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Gly Arg Gly Pro Leu Ala Glu Ser Ser Asp Ser Gly Lys Lys Val Pro
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Thr Pro Ala Pro Arg Pro Leu Leu Leu Lys Lys Ser Val Ser Ser Glu
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Asn Pro Thr Tyr Pro Ser Ala Pro Leu Lys Pro Val Thr Val Pro Pro
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Arg Leu Ala Gly Ala Ser Gln Ala Lys Ala Tyr Lys Ser Leu Gly Glu
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Gly Pro Pro Ala Asn Pro Pro Val Pro Val Leu Gln Ser Lys Pro Leu
465 470 475 480

Val Asp Ile Asp Leu Ile Ser Phe Asp Asp Asp Val Leu Pro Thr Pro
485 490 495

Ser Gly Asn Leu Ala Glu Glu Ser Val Gly Ser Glu Met Val Leu Asp
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Pro Phe Gln Leu Pro Ala Lys Thr Glu Pro Ile Lys Glu Arg Ala Val
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Gln Pro Ala Pro Thr Arg Lys Pro Thr Val Ile Arg Ile Pro Ala Lys
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Pro Gly Lys Cys Leu His Glu Asp Pro Gln Ser Pro Pro Pro Leu Pro
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Ala Glu Lys Pro Ile Gly Asn Thr Phe Ser Thr Val Ser Gly Lys Leu
565 570 575

Ser Asn Val Glu Arg Thr Arg Asn Leu Glu Ser Asn His Pro Gly Gln
580 585 590

Thr Gly Gly Phe Val Arg Val Pro Pro Arg Leu Pro Pro Arg Pro Val
595 600 605

Asn Gly Lys Thr Ile Pro Thr Gln Gln Pro Pro Thr Lys Val Pro Pro
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Glu Arg Pro Pro Pro Lys Leu Ser Ala Thr Arg Arg Ser Asn Lys
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Lys Leu Pro Phe Asn Arg Ser Ser Asp Met Asp Leu Gln Lys Lys
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Gln Ser Asn Leu Ala Thr Gly Leu Ser Lys Ala Lys Ser Gln Val Phe
660 665 670

Lys Asn Gln Asp Pro Val Leu Pro Pro Arg Pro Lys Pro Gly His Pro
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Leu Tyr Ser Lys Tyr Met Leu Ser Val Pro His Gly Ile Ala Asn Glu
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Asp Ile Val Ser Gln Asn Pro Gly Glu Leu Ser Cys Lys Arg Gly Asp
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Val Leu Val Met Leu Lys Gln Thr Glu Asn Asn Tyr Leu Glu Cys Gln
725 730 735

Lys Gly Glu Asp Thr Gly Arg Val His Leu Ser Gln Met Lys Ile Ile
740 745 750

Thr Pro Leu Asp Glu His Leu Arg Ser Arg Pro Asn Asp Pro Ser His
755 760 765

Ala Gln Lys Pro Val Asp Ser Gly Ala Pro His Ala Val Val Leu His
770 775 780

Asp Phe Pro Ala Glu Gln Val Asp Asp Leu Asn Leu Thr Ser Gly Glu
785 790 795 800

Ile Val Tyr Leu Leu Glu Lys Ile Asp Thr Asp Trp Tyr Arg Gly Asn
805 810 815

Cys Arg Asn Gln Ile Gly Ile Phe Pro Ala Asn Tyr Val Lys Val Ile
820 825 830

Ile Asp Ile Pro Glu Gly Gly Asn Gly Lys Arg Glu Cys Val Ser Ser
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His Cys Val Lys Gly Ser Arg Cys Val Ala Arg Phe Glu Tyr Ile Gly
850 855 860

Glu Gln Lys Asp Glu Leu Ser Phe Ser Glu Gly Glu Ile Ile Leu
865 870 875 880

Lys Glu Tyr Val Asn Glu Glu Trp Ala Arg Gly Glu Val Arg Gly Arg
885 890 895

Thr Gly Ile Phe Pro Leu Asn Phe Val Glu Pro Val Glu Asp Tyr Pro
900 905 910

Thr Ser Gly Ala Asn Val Leu Ser Thr Lys Val Pro Leu Lys Thr Lys
915 920 925

Lys Glu Asp Ser Gly Ser Asn Ser Gln Val Asn Ser Leu Pro Ala Glu
930 935 940

Trp Cys Glu Ala Leu His Ser Phe Thr Ala Glu Thr Ser Asp Asp Leu
945 950 955 960

Ser Phe Lys Arg Gly Asp Arg Ile Gln Ile Leu Glu Arg Leu Asp Ser
965 970 975

Asp Trp Cys Arg Gly Arg Leu Gln Asp Arg Glu Gly Ile Phe Pro Ala
980 985 990

Val Phe Val Arg Pro Cys Pro Ala Glu Ala Lys Ser Met Leu Ala Ile
995 1000 1005

Val Pro Lys Gly Arg Lys Ala Lys Ala Leu Tyr Asp Phe Arg Gly
1010 1015 1020

Glu Asn Glu Asp Glu Leu Ser Phe Lys Ala Gly Asp Ile Ile Thr
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Glu Leu Glu Ser Val Asp Asp Asp Trp Met Ser Gly Glu Leu Met
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Ile Ser
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acagccgcgg ccgacgcctc ctctccggga gccgccttcc ccccgcccg agggcggtgg 180
cgtggggcgc cgggtgcagg cgttctgggg cgccggggcc gcagctcgct ggccatcccg 240
cggtgcgcgc ccgcgcctcg ccc atg gct gag ggc cgg cgg gag gac gag 293
Met Ala Glu Gly Arg Arg Arg Glu Asp Glu
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gag gaa gag cta cgc gag cgc cgc gaa ctt ggt ggc cag cgc cgc gcc 341
Glu Glu Glu Leu Arg Glu Arg Arg Glu Leu Gly Gly Gln Arg Arg Ala
15 20 25
cgg ggc cgt gcg ctc tcg ggc cac tcg gcc gca gat cgc aac gaa cga 389
Arg Gly Arg Ala Leu Ser Gly His Ser Ala Ala Asp Arg Asn Glu Arg
30 35 40
aat aaa cca gaa cat cgt tct tca agc caa gga ccc ttg tca tcc att 437
Asn Lys Pro Glu His Arg Ser Ser Ser Gln Gly Pro Leu Ser Ser Ile
45 50 55
aga gcg gta atc aag aga tct tct cgg act tct att cag agt gaa ctt 485
Arg Ala Val Ile Lys Arg Ser Ser Arg Thr Ser Ile Gln Ser Glu Leu

60	65	70	
sat cga gat aga agg cgc cca gag atc acc att gtg gca gct gag cca His Arg Asp Arg Arg Arg Pro Glu Ile Thr Ile Val Ala Ala Glu Pro	75	80	533
75	85	90	
ctg agg cca gcc tcg tgg ttt cca gga acc cca ccc cca gga ctg gga Leu Arg Pro Ala Ser Trp Phe Pro Gly Thr Pro Pro Pro Gly Leu Gly	95	100	581
95	105		
ttt cct aca tca tct gca gca ggc tct tgg agg cct aat gag ctg gtt Phe Pro Thr Ser Ser Ala Ala Gly Ser Trp Arg Pro Asn Glu Leu Val	110	115	629
110	120		
cct gct gag ctc cca cca tct tat gaa caa gtt ata aaa gaa atc aac Pro Ala Glu Leu Pro Pro Ser Tyr Glu Gln Val Ile Lys Glu Ile Asn	125	130	677
125	135		
caa gtt caa gtt aat act aca aat aat aat gct gct gct act cca Gln Val Gln Val Asn Thr Thr Asn Asn Asn Ala Ala Ala Thr Pro	140	145	725
140	150		
agg cac act att act tct gca act cag act gac ttt tca gaa gaa ata Arg His Thr Ile Thr Ser Ala Thr Gln Thr Asp Phe Ser Glu Glu Ile	155	160	773
155	165	170	
gac aac gat ctg cct caa aca cta cag gca cct ctc aag cct ctt cag Asp Asn Asp Leu Pro Gln Thr Leu Gln Ala Pro Leu Lys Pro Leu Gln	175	180	821
175	185		
cct ttc tca gca gtc tcg tct ggc aat ctt cca aca aat gtg gca cct Pro Phe Ser Ala Val Ser Ser Gly Asn Leu Pro Thr Asn Val Ala Pro	190	195	869
190	200		
tta atc gtc ttt gat att tct gaa gaa ccg aat tgt cca gaa aac ccc Leu Ile Val Phe Asp Ile Ser Glu Glu Pro Asn Cys Pro Glu Asn Pro	205	210	917
205	215		
agt gct aca aga tgt cca gtg cca aaa cca aga tca aaa agc aac ctc Ser Ala Thr Arg Cys Pro Val Pro Lys Pro Arg Ser Lys Ser Asn Leu	220	225	965
220	230		
aga cca ata ccc aga gat tct cac att aaa gag caa agt caa cag aaa Arg Pro Ile Pro Arg Asp Ser His Ile Lys Glu Gln Ser Gln Gln Lys	235	240	1013
235	245	250	
atc agc cca gca gcc gta gga gag gag tca tcc cca ggc cgcc ccc cag Ile Ser Pro Ala Ala Val Gly Glu Ser Ser Pro Gly Arg Pro Gln	255	260	1061
255	265		
tct ctg ctg gac aac gct agc acc tca gac agt cag gca gtg atg aac Ser Leu Leu Asp Asn Ala Ser Thr Ser Asp Ser Gln Ala Val Met Asn	270	275	1109
270	280		
att atg aac aca gaa caa agc caa aat agt att gtt tcc aga att aaa Ile Met Asn Thr Glu Gln Ser Gln Asn Ser Ile Val Ser Arg Ile Lys	285	290	1157
285	295		
gtg ttt gag ggt cag aca aac ata gaa acc tca gga ctg ccc aag aaa Val Phe Glu Gly Gln Thr Asn Ile Glu Thr Ser Gly Leu Pro Lys Lys	300	305	1205
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gga ctc acc cca tac cct ccc ctg caa gaa gcg gga agc atc cca gta Gly Leu Thr Pro Tyr Pro Pro Leu Gln Glu Ala Gly Ser Ile Pro Val 365 370 375				1397
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gtt aat cct gag att ccg gga aga ggg ccc ctg gct gag agc tct gat Val Asn Pro Glu Ile Pro Gly Arg Gly Pro Leu Ala Glu Ser Ser Asp 395 400 405 410				1493
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cct gtc act gtt cct ccc cga ctc gca ggg gca tca caa gcc aaa gca Pro Val Thr Val Pro Pro Arg Leu Ala Gly Ala Ser Gln Ala Lys Ala 445 450 455				1637
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tca gag atg gtt cta gat ccc ttt cag ctc cct gca aaa aca gaa cca Ser Glu Met Val Leu Asp Pro Phe Gln Leu Pro Ala Lys Thr Glu Pro 510 515 520				1829
ata aaa gaa cga gca gtt caa cca gca ccc acc agg aag ccc act gta Ile Lys Glu Arg Ala Val Gln Pro Ala Pro Thr Arg Lys Pro Thr Val 525 530 535				1877
att cga att cca gcc aaa cca gga aaa tgt tta cat gag gat cca caa Ile Arg Ile Pro Ala Lys Pro Gly Lys Cys Leu His Glu Asp Pro Gln 540 545 550				1925
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aca ata tct gga aag ctc agt aat gtt gag aga act aga aac ttg gaa Thr Val Ser Gly Lys Leu Ser Asn Val Glu Arg Thr Arg Asn Leu Glu				2021

575	580	585	
tcc aac cac cca ggt caa aca gga ggt ttt gtg cga gta ccc cca agg Ser Asn His Pro Gly Gln Thr Gly Gly Phe Val Arg Val Pro Pro Arg 590	595	600	2069
ttg cca ccg aga cct gtg aat ggt cat cta att atg aca aca ata ctc Leu Pro Prc Arg Pro Val Asn Gly His Leu Ile Met Thr Thr Ile I.eu 605	610	615	2117
ttc atg tcg tgc tct gcc cga gcc cggt atg ggt ttc act ggt att gta Phe Met Ser Cys Ser Ala Arg Ala Arg Met Gly Phe Thr Gly Ile Val 620	625	630	2165
cac att cta cga ttc aag ctt ctt ctc gag tcg tgg tgc tgg agc gag His Ile Leu Arg Phe Lys Leu Leu Glu Ser Trp Cys Trp Ser Glu 635	640	645	2213
gct ggt ggc tca gtg ata gag ctg gca gag gca ttc gct cgt cta cag Ala Gly Gly Ser Val Ile Glu Leu Ala Glu Ala Phe Ala Arg Leu Gln 655	660	665	2261
ata atg tct tcg ttc tcc tcc aaa cat gga tgg tcc ttc ata gac tgg Ile Met Ser Ser Phe Ser Lys His Gly Trp Ser Phe Ile Asp Trp 670	675	680	2309
tcg gtc aga ctt ccg gtc ata gga tgg cct agt caa aac ccc ctc ttc Ser Val Arg Leu Pro Val Ile Gly Trp Pro Ser Gln Asn Pro Leu Phe 685	690	695	2357
tgg atg agg aat ggt ctt ttt tgt ctc gat atg act gag ctc tat cat Trp Met Arg Asn Gly Leu Phe Cys Leu Asp Met Thr Glu Leu Tyr His 700	705	710	2405
ctc gag aca aaa acc att cca act caa cag cct cca acc aag gtg Leu Glu Thr Lys Lys Thr Ile Pro Thr Gln Gln Pro Pro Thr Lys Val 715	720	725	2453
ccc cct gag aga cca cct ccc cca aag ctt tct gca acc aga aga tct Pro Pro Glu Arg Pro Pro Pro Lys Leu Ser Ala Thr Arg Arg Ser 735	740	745	2501
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aag cag acg gaa aat aat tac ttg gag tgc caa aag gga gaa gac act Lys Gln Thr Glu Asn Asn Tyr Leu Glu Cys Gln Lys Gly Glu Asp Thr 815	820	825	2741
gac aga gtt cac ctg tct caa atg aag att atc act cca ctt gat gaa His Arg Val His Leu Ser Gln Met Lys Ile Ile Thr Pro Leu Asp Glu			2789

830	835	840	
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35 40 45

Ser Ser Ser Gln Gly Pro Leu Ser Ser Ile Arg Ala Val Ile Lys Arg
50 55 60

Ser Ser Arg Thr Ser Ile Gln Ser Glu Leu His Arg Asp Arg Arg Arg
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Pro Glu Ile Thr Ile Val Ala Ala Glu Pro Leu Arg Pro Ala Ser Trp
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Phe Pro Gly Thr Pro Pro Pro Gly Leu Gly Phe Pro Thr Ser Ser Ala
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Ala Gly Ser Trp Arg Pro Asn Glu Leu Val Pro Ala Glu Leu Pro Pro
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Ser Tyr Glu Gln Val Ile Lys Glu Ile Asn Gln Val Gln Val Asn Thr
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Thr Asn Asn Asn Asn Ala Ala Ala Thr Pro Arg His Thr Ile Thr Ser
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Ala Thr Gln Thr Asp Phe Ser Glu Glu Ile Asp Asn Asp Leu Pro Gln
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Thr Leu Gln Ala Pro Leu Lys Pro Leu Gln Pro Phe Ser Ala Val Ser
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Ser Gly Asn Leu Pro Thr Asn Val Ala Pro Leu Ile Val Phe Asp Ile
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Ser Glu Glu Pro Asn Cys Pro Glu Asn Pro Ser Ala Thr Arg Cys Pro
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Val Pro Lys Pro Arg Ser Lys Ser Asn Leu Arg Pro Ile Pro Arg Asp
225 230 235 240

Ser His Ile Lys Glu Gln Ser Gln Gln Lys Ile Ser Pro Ala Ala Val
245 250 255

Gly Glu Glu Ser Ser Pro Gly Arg Pro Gln Ser Leu Leu Asp Asn Ala
260 265 270

Ser Thr Ser Asp Ser Gln Ala Val Met Asn Ile Met Asn Thr Glu Gln
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Ser Gln Asn Ser Ile Val Ser Arg Ile Lys Val Phe Glu Gly Gln Thr
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Asn Ile Glu Thr Ser Gly Leu Pro Lys Lys Pro Glu Ile Thr Pro Arg
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Glu Asn Arg Leu Lys Val Thr Ser Lys Glu Gly Leu Thr Pro Tyr Pro
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Thr Pro Ala Pro Arg Pro Leu Leu Leu Lys Lys Ser Val Ser Ser Glu
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Val Asp Ile Asp Leu Ile Ser Phe Asp Asp Asp Val Leu Pro Thr Pro
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Ser Gly Asn Leu Ala Glu Glu Ser Val Gly Ser Glu Met Val Leu Asp
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Pro Phe Gln Leu Pro Ala Lys Thr Glu Pro Ile Lys Glu Arg Ala Val
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Pro Gly Lys Cys Leu His Glu Asp Pro Gln Ser Pro Pro Pro Leu Pro
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Ser Asn Val Glu Arg Thr Arg Asn Leu Glu Ser Asn His Pro Gly Gln
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Thr Gly Gly Phe Val Arg Val Pro Pro Arg Leu Pro Pro Arg Pro Val
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Arg Ala Arg Met Gly Phe Thr Gly Ile Val His Ile Leu Arg Phe Lys
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Leu Leu Leu Glu Ser Trp Cys Trp Ser Glu Ala Gly Gly Ser Val Ile
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Glu Leu Ala Glu Ala Phe Ala Arg Leu Gln Ile Met Ser Ser Phe Ser
660 665 670

Ser Lys His Gly Trp Ser Phe Ile Asp Trp Ser Val Arg Leu Pro Val
675 680 685

Ile Gly Trp Pro Ser Gln Asn Pro Leu Phe Trp Met Arg Asn Gly Leu
690 695 700

Phe Cys Leu Asp Met Thr Glu Leu Tyr His Leu Glu Thr Lys Lys Thr
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Ile Pro Thr Gln Gln Pro Pro Thr Lys Val Pro Pro Glu Arg Pro Pro
725 730 735

Pro Pro Lys Leu Ser Ala Thr Arg Arg Ser Asn Lys Lys Leu Pro Phe
740 745 750

Asn Arg Ser Ser Ser Asp Met Asp Leu Gln Lys Lys Gln Ser Asn Leu
735 760 765

Ala Thr Gly Leu Ser Lys Ala Lys Ser Gln Val Phe Lys Asn Gln Asp
770 775 780

Prc Val Leu Pro Pro Arg Pro Lys Pro Gly His Pro Leu Tyr Ser Lys
785 790 795 800

Tyr Met Arg Gly Asp Val Leu Val Met Leu Lys Gln Thr Glu Asn Asn
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Tyr Leu Glu Cys Gln Lys Gly Glu Asp Thr Gly Arg Val His Leu Ser
820 825 830

Gln Met Lys Ile Ile Thr Pro Leu Asp Glu His Leu Arg Ser Arg Pro
835 840 845

Asn Asp Pro Ser His Ala Gln Lys Pro Val Asp Ser Gly Ala Pro His
850 855 860

Ala Val Val Leu His Asp Phe Pro Ala Glu Gln Val Asp Asp Leu Asn
865 870 875 880

Leu Thr Ser Gly Glu Ile Val Tyr Leu Leu Glu Lys Ile Asp Thr Asp
885 890 895

Trp Tyr Arg Gly Asn Cys Arg Asn Gln Ile Gly Ile Phe Pro Ala Asn
900 905 910

Tyr Val Lys Val Ile Ile Asp Ile Pro Glu Gly Gly Asn Gly Lys Arg
915 920 925

Glu Cys Val Ser Ser His Cys Val Lys Gly Ser Arg Cys Val Ala Arg
930 935 940

Phe Glu Tyr Ile Gly Glu Gln Lys Asp Glu Leu Ser Phe Ser Glu Gly
945 950 955 960

Glu Ile Ile Ile Leu Lys Glu Tyr Val Asn Glu Glu Trp Ala Arg Gly
965 970 975

Glu Val Arg Gly Arg Thr Gly Ile Phe Pro Leu Asn Phe Val Glu Pro
980 985 990

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cgtggggcgc cgggtgcagg cggtctgggg cggccggggcc gcagctcgct ggccatcccg 240
cggtcgccccc cccgcgcctcg ccc atg gct gag ggc cgg cgg cgg gag gac gag 293
Met Ala Glu Gly Arg Arg Glu Asp Glu
1 5 10
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cg ggc cgt gcg ctc tcg ggc cac tcg gcc gca gat cgc aac gaa cga 389
Arg Gly Arg Ala Leu Ser Gly His Ser Ala Ala Asp Arg Asn Glu Arg
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Asn Lys Pro Glu His Arg Ser Ser Gln Gly Pro Leu Ser Ser Ile
45 50 55
aga gcg gta atc aag aga tct tct cgg act tct att cag agt gaa ctt 485
Arg Ala Val Ile Lys Arg Ser Ser Arg Thr Ser Ile Gln Ser Glu Leu
60 65 70
cat cga gat aga agg cgc cca gag atc acc att gtg gca gct gag cca 533
His Arg Asp Arg Arg Pro Glu Ile Thr Ile Val Ala Ala Glu Pro
75 80 85 90
ctg agg cca gcc tcg tgg ttt cca gga acc cca ccc cca gga ctg gga 581
Leu Arg Pro Ala Ser Trp Phe Pro Gly Thr Pro Pro Pro Gly Leu Gly
95 100 105
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Phe Pro Thr Ser Ser Ala Ala Gly Ser Trp Arg Pro Asn Glu Leu Val
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cct gct gag ctc cca cca tct tat gaa caa gtt ata aaa gaa atc aac 677
Pro Ala Glu Leu Pro Pro Ser Tyr Glu Gln Val Ile Lys Glu Ile Asn
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Gly	His	Ser	Ala	Ala	Asp	Arg	Asn	Glu	Arg	Asn	Lys	Pro	Glu	His	Arg
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Ser	Ser	Ser	Gln	Gly	Pro	Leu	Ser	Ser	Ile	Arg	Ala	Val	Ile	Lys	Arg
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Ser	Ser	Arg	Thr	Ser	Ile	Gln	Ser	Glu	Leu	His	Arg	Asp	Arg	Arg	Arg
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Pro Glu Ile Thr Ile Val Ala Ala Glu Pro Leu Arg Pro Ala Ser Trp
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Phe Pro Gly Thr Pro Pro Gly Leu Gly Phe Pro Thr Ser Ser Ala
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Ala Gly Ser Trp Arg Pro Asn Glu Leu Val Pro Ala Glu Leu Pro Pro
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Ser Tyr Glu Gln Val Ile Lys Glu Ile Asn Gln Val Gln Val Asn Thr
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Thr Asn Asn Asn Asn Ala Ala Ala Thr Pro Arg His Thr Ile Thr Ser
145 150 155 160

Ala Thr Gln Thr Asp Phe Ser Glu Glu Ile Asp Asn Asp Leu Pro Gln
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Ser Asn Ala Thr Leu Gln Ala Pro Leu Lys Pro Leu Gln Pro Phe Ser
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Ala Val Ser Ser Gly Asn Leu Pro Thr Asn Val Ala Pro Leu Ile Val
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Phe Asp Ile Ser Glu Glu Pro Asn Cys Pro Glu Asn Pro Ser Ala Thr
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Arg Cys Pro Val Pro Lys Pro Arg Ser Lys Ser Asn Leu Arg Pro Ile
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Pro Arg Asp Ser His Ile Lys Glu Gln Ser Gln Gln Lys Ile Ser Pro
245 250 255

Ala Ala Val Gly Glu Glu Ser Ser Pro Gly Arg Pro Gln Ser Leu Leu
260 265 270

Asp Asn Ala Ser Thr Ser Asp Ser Gln Ala Val Met Asn Ile Met Asn
275 280 285

Thr Glu Gln Ser Gln Asn Ser Ile Val Ser Arg Ile Lys Val Phe Glu
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Gly Gln Thr Asn Ile Glu Thr Ser Gly Leu Pro Lys Lys Pro Glu Ile
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Thr Pro Arg Ser Leu Pro Pro Lys Pro Thr Val Ser Ser Gly Lys Pro
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Ser Val Ala Pro Lys Pro Ala Ala Asn Arg Ala Ser Gly Glu Trp Asp
340 345 350

Ser Gly Thr Glu Asn Arg Leu Lys Val Thr Ser Lys Glu Gly Leu Thr
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Pro Tyr Pro Pro Leu Gln Glu Ala Gly Ser Ile Pro Val Thr Lys Pro
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Glu Leu Pro Lys Lys Pro Asn Pro Gly Leu Ile Arg Ser Val Asn Pro
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Glu Ile Pro Gly Arg Gly Pro Leu Ala Glu Ser Ser Asp Ser Gly Lys
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Lys Val Pro Thr Pro Ala Pro Arg Pro Leu Leu Leu Lys Lys Ser Val
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Ser Ser Glu Asn Pro Thr Tyr Pro Ser Ala Pro Leu Lys Pro Val Thr
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Val Pro Pro Arg Leu Ala Gly Ala Ser Gln Ala Lys Ala Tyr Lys Ser
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Leu Gly Glu Gly Pro Pro Ala Asn Pro Pro Val Pro Val Leu Gln Ser
465 470 475 480

Lys Pro Leu Val Asp Ile Asp Leu Ile Ser Phe Asp Asp Asp Val Leu
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Pro Thr Pro Ser Gly Asn Leu Ala Glu Glu Ser Val Gly Ser Glu Met
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Val Leu Asp Pro Phe Gln Leu Pro Ala Lys Thr Glu Pro Ile Lys Glu
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Arg Ala Val Gln Pro Ala Pro Thr Arg Lys Pro Thr Val Ile Arg Ile
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Pro Ala Lys Pro Gly Lys Cys Leu His Glu Asp Pro Gln Ser Pro Pro
545 550 555 560

Pro Leu Pro Ala Glu Lys Pro Ile Gly Asn Thr Phe Ser Thr Val Ser
565 570 575

Gly Lys Leu Ser Asn Val Glu Arg Thr Arg Asn Leu Glu Ser Asn His
580 585 590

Prc Gly Gln Thr Gly Gly Phe Val Arg Val Pro Pro Arg Leu Pro Pro
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Arg Pro Val Asn Gly Lys Thr Ile Pro Thr Gln Gln Pro Pro Thr Lys
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Val Pro Prc Glu Arg Pro Pro Pro Lys Leu Ser Ala Thr Arg Arg
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Ser Asn Lys Lys Leu Pro Phe Asn Arg Ser Ser Ser Asp Met Asp Leu
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Gln Lys Lys Gln Ser Asn Leu Ala Thr Gly Leu Ser Lys Ala Lys Ser
660 665 670

Gln Val Phe Lys Asn Gln Asp Pro Val Leu Pro Pro Arg Pro Lys Pro
675 680 685

Gly His Pro Leu Tyr Ser Lys Tyr Met Leu Ser Val Pro His Gly Ile
690 695 700

Ala Asn Glu Asp Ile Val Ser Gln Asn Pro Gly Glu Leu Ser Cys Lys
705 710 715 720

Arg Gly Asp Val Leu Val Met Leu Lys Gln Thr Glu Asn Asn Tyr Leu
725 730 735

Glu Cys Gln Lys Gly Glu Asp Thr Gly Arg Val His Leu Ser Gln Met
740 745 750

Lys Ile Ile Thr Pro Leu Asp Glu His Leu Arg Ser Arg Pro Asn Asp
755 760 765

Pro Ser His Ala Gln Lys Pro Val Asp Ser Gly Ala Pro His Ala Val
770 775 780

Val Leu His Asp Phe Pro Ala Glu Gln Val Asp Asp Leu Asn Leu Thr
785 790 795 800

Ser Gly Glu Ile Val Tyr Leu Leu Glu Lys Ile Asp Thr Asp Trp Tyr
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Arg Gly Asn Cys Arg Asn Gln Ile Gly Ile Phe Pro Ala Asn Tyr Val
820 825 830

Lys Val Ile Ile Asp Ile Pro Glu Gly Gly Asn Gly Lys Arg Glu Cys
835 840 845

Val Ser Ser His Cys Val Lys Gly Ser Arg Cys Val Ala Arg Phe Glu
850 855 860

Tyr Ile Gly Glu Gln Lys Asp Glu Leu Ser Phe Ser Glu Gly Glu Ile
865 870 875 880

Ile Ile Leu Lys Glu Tyr Val Asn Glu Glu Trp Ala Arg Gly Glu Val
885 890 895

Arg Gly Arg Thr Gly Ile Phe Pro Leu Asn Phe Val Glu Pro Val Glu
900 905 910

Asp Tyr Pro Thr Ser Gly Ala Asn Val Leu Ser Thr Lys Val Pro Leu
915 920 925

Lys Thr Lys Lys Glu Asp Ser Gly Ser Asn Ser Gln Val Asn Ser Leu
930 935 940

Pro Ala Glu Trp Cys Glu Ala Leu His Ser Phe Thr Ala Glu Thr Ser
945 950 955 960

Asp Asp Leu Ser Phe Lys Arg Gly Asp Arg Ile Gln Ile Leu Glu Arg
965 970 975

Leu Asp Ser Asp Trp Cys Arg Gly Arg Leu Gln Asp Arg Glu Gly Ile
980 985 990

Phe Pro Ala Val Phe Val Arg Pro Cys Pro Ala Glu Ala Lys Ser Met
995 1000 1005

Leu Ala Ile Val Pro Lys Gly Arg Lys Ala Lys Ala Leu Tyr Asp
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 Pro Ser Pro His Ser Ser Asn Gly His Ser Pro Gln Asp Thr Ser
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 Thr Ser Pro Ile Lys Lys Lys Lys Pro Gly Leu Leu Asn Ser Asn
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 Asn Lys Glu Gln Ser Glu Leu Arg His Gly Pro Phe Tyr Tyr Met Lys
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 Gln Pro Leu Thr Asp Pro Val Asp Val Val Pro Gln Asp Gly Arg
 75 80 85

 aat gat ttc tac tgc tgg gtt tgt cac cgg gaa ggc caa gtc ctt tgc 641
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 90 95 100

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 Cys Glu Leu Cys Pro Arg Val Tyr His Ala Lys Cys Leu Arg Leu Thr
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 Ser Glu Pro Glu Gly Asp Trp Phe Cys Pro Glu Cys Glu Lys Ile Thr
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 Val Ala Glu Cys Ile Glu Thr Gln Ser Lys Ala Met Thr Met Leu Thr
 135 140 145 150

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gaa aag aat gcg aaa aag aaa atg tat ggc tgc aca gaa gcc ttc ctg Glu Lys Asn Ala Lys Lys Met Tyr Gly Cys Thr Glu Ala Phe Leu 200 205 210	977
gct gat gca aag tgg att ttg cac aac tgc atc att tat aat ggg gga Ala Asp Ala Lys Trp Ile Leu His Asn Cys Ile Ile Tyr Asn Gly Gly 215 220 225 230	1025
aat cac aaa ttg acg caa ata gcg aaa gta gtc atc aaa atc tgt gaa Asn His Lys Leu Thr Gln Ile Ala Lys Val Val Ile Lys Ile Cys Glu 235 240 245	1073
cat gag atg aat gaa atc gaa gta tgt cca gaa tgt tat cta gct gct His Glu Met Asn Glu Ile Glu Val Cys Pro Glu Cys Tyr Leu Ala Ala 250 255 260	1121
tgc caa aaa cga gat aac tgg ttt tgt gag cct tgt agc aat cca cat Cys Gln Lys Arg Asp Asn Trp Phe Cys Glu Pro Cys Ser Asn Pro His 265 270 275	1169
cct ttg gtc tgg gcc aaa ctg aag ggg ttt cca ttc tgg cct gca aaa Pro Leu Val Trp Ala Lys Leu Lys Gly Phe Pro Phe Trp Pro Ala Lys 280 285 290	1217
gct cta agg gat aaa gac ggg cag gtc gat gcc cga ttc ttt gga caa Ala Leu Arg Asp Lys Asp Gly Gln Val Asp Ala Arg Phe Phe Gly Gln 295 300 305 310	1265
cat gac agg gcc tgg gtt cca ata aat aat tgc tac ctc atg tct aaa His Asp Arg Ala Trp Val Pro Ile Asn Asn Cys Tyr Leu Met Ser Lys 315 320 325	1313
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ccc aag atc ctg atg agc aag cct gtg ctg agt ggg ggc aca ggc cgc Prc Lys Ile Leu Met Ser Lys Pro Val Leu Ser Gly Gly Thr Gly Arg 410 415 420	1601

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Arg Ile Ser Leu Ser Asp Met Pro Arg Ser Pro Met Ser Thr Asn Ser			
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Ser Val His Thr Gly Ser Asp Val Glu Gln Asp Ala Glu Lys Lys Ala			
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Thr Ser Ser His Phe Ser Ala Ser Glu Glu Ser Met Asp Phe Leu Asp			
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Lys Ser Thr Ala Ser Pro Ala Ser Thr Lys Thr Gly Gln Ala Gly Ser			
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Ile Ser Gly Ser Pro Lys Pro Phe Ser Pro Gln Leu Ser Ala Pro Ile			
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Thr Thr Lys Thr Asp Lys Thr Ser Thr Thr Gly Ser Ile Leu Asn Leu			
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Cys Lys Ala Gln Leu Gly Ile Asn Glu Ile Ser Glu Asp Val Tyr Thr			
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Ala Val Glu His Ser Asp Ser Glu Asp Ser Glu Lys Ser Asp Ser Ser			
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Asp Ser Glu Tyr Ile Ser Asp Asp Glu Gln Lys Ser Lys Asn Glu Pro			
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Glu Asp Thr Glu Asp Lys Glu Gly Cys Gln Met Asp Lys Glu Pro Ser			
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Ala Val Lys Lys Pro Lys Pro Thr Asn Pro Val Glu Ile Lys Glu			
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Glu Leu Lys Ser Thr Ser Pro Ala Ser Glu Lys Ala Asp Pro Gly Ala			
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gtc aag gac aag gcc agc cct gag cct gag aag gac ttt tcc gaa aag		2369	
Val Lys Asp Lys Ala Ser Pro Glu Pro Glu Lys Asp Phe Ser Glu Lys			
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agc gaa ctt gtc ata gat tta gga gaa gac cat tct ggg cg ^g gag ggt Ser Glu Leu Val Ile Asp Leu Gly Glu Asp His Ser Gly Arg Glu Gly 715 720 725	2513
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1210															
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Gly Leu Leu Asn Ser Asn Asn Lys Glu Gln Ser Glu Leu Arg His Gly
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Pro Phe Tyr Tyr Met Lys Gln Pro Leu Thr Thr Asp Pro Val Asp Val
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Val Pro Gln Asp Gly Arg Asn Asp Phe Tyr Cys Trp Val Cys His Arg
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Glu Gly Gln Val Leu Cys Cys Glu Leu Cys Pro Arg Val Tyr His Ala
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Lys Cys Leu Arg Leu Thr Ser Glu Pro Glu Gly Asp Trp Phe Cys Pro
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Glu Cys Glu Lys Ile Thr Val Ala Glu Cys Ile Glu Thr Gln Ser Lys
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Ala Met Thr Met Leu Thr Ile Glu Gln Leu Ser Tyr Leu Leu Lys Phe
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Ala Ile Gln Lys Met Lys Gln Pro Gly Thr Asp Ala Phe Gln Lys Pro
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Val Pro Leu Glu Gln His Pro Asp Tyr Ala Glu Tyr Ile Phe His Pro
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Met Asp Leu Cys Thr Leu Glu Lys Asn Ala Lys Lys Met Tyr Gly
195 200 205

Cys Thr Glu Ala Phe Leu Ala Asp Ala Lys Trp Ile Leu His Asn Cys
210 215 220

Ile Ile Tyr Asn Gly Gly Asn His Lys Leu Thr Gln Ile Ala Lys Val
225 230 235 240

Val Ile Lys Ile Cys Glu His Glu Met Asn Glu Ile Glu Val Cys Pro
245 250 255

Glu Cys Tyr Leu Ala Ala Cys Gln Lys Arg Asp Asn Trp Phe Cys Glu
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Pro Cys Ser Asn Pro His Pro Leu Val Trp Ala Lys Leu Lys Gly Phe
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Pro Phe Trp Pro Ala Lys Ala Leu Arg Asp Lys Asp Gly Gln Val Asp
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Ala Arg Phe Phe Gly Gln His Asp Arg Ala Trp Val Pro Ile Asn Asn
305 310 315 320

Cys Tyr Leu Met Ser Lys Glu Ile Pro Phe Ser Val Lys Lys Thr Lys
325 330 335

Ser Ile Phe Asn Ser Ala Met Gln Glu Met Glu Val Tyr Val Glu Asn
340 345 350

Ile Arg Arg Lys Phe Gly Val Phe Asn Tyr Ser Pro Phe Arg Thr Pro
355 360 365

Tyr Thr Pro Asn Ser Gln Tyr Gln Met Leu Leu Asp Pro Thr Asn Pro
370 375 380

Ser Ala Gly Thr Ala Lys Ile Asp Lys Gln Glu Lys Val Lys Leu Asn
385 390 395 400

Phe Asp Met Thr Ala Ser Pro Lys Ile Leu Met Ser Lys Pro Val Leu
405 410 415

Ser Gly Gly Thr Gly Arg Arg Ile Ser Leu Ser Asp Met Pro Arg Ser
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Pro Met Ser Thr Asn Ser Ser Val His Thr Gly Ser Asp Val Glu Gln
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Asp Ala Glu Lys Lys Ala Thr Ser Ser His Phe Ser Ala Ser Glu Glu
450 455 460

Ser Met Asp Phe Leu Asp Lys Ser Thr Ala Ser Pro Ala Ser Thr Lys
465 470 475 480

Thr Gly Gln Ala Gly Ser Leu Ser Gly Ser Pro Lys Pro Phe Ser Pro
485 490 495

Gln Leu Ser Ala Pro Ile Thr Thr Lys Thr Asp Lys Thr Ser Thr Thr
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Gly Ser Ile Leu Asn Leu Asn Leu Asp Arg Ser Lys Ala Glu Met Asp
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Leu Ile Ser Pro Lys Arg Gln Ile Arg Ser Arg Phe Gln Leu Asn Leu
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Asp Lys Thr Ile Glu Ser Cys Lys Ala Gln Leu Gly Ile Asn Glu Ile
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Ser Glu Asp Val Tyr Thr Ala Val Glu His Ser Asp Ser Glu Asp Ser
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Glu Lys Ser Asp Ser Ser Asp Ser Glu Tyr Ile Ser Asp Asp Glu Gln
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Lys Ser Lys Asn Glu Pro Glu Asp Thr Glu Asp Lys Glu Gly Cys Gln
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Met Asp Lys Glu Pro Ser Ala Val Lys Lys Pro Lys Pro Thr Asn
625 630 635 640

Pro Val Glu Ile Lys Glu Glu Leu Lys Ser Thr Ser Pro Ala Ser Glu
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Lys Asp Phe Ser Glu Lys Ala Lys Pro Ser Pro His Pro Ile Lys Asp
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Lys Leu Lys Gly Lys Asp Glu Thr Asp Ser Pro Thr Val His Leu Gly
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Leu Asp Ser Asp Ser Glu Ser Glu Leu Val Ile Asp Leu Gly Glu Asp
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His Ser Gly Arg Glu Gly Arg Lys Asn Lys Lys Glu Pro Lys Glu Pro
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Ser Pro Lys Gln Asp Val Val Gly Lys Thr Pro Pro Ser Thr Thr Val
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Gly Ser His Ser Pro Pro Glu Thr Pro Val Leu Thr Arg Ser Ser Ala
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Gln Thr Ser Ala Ala Gly Ala Thr Ala Thr Thr Ser Thr Ser Ser Thr
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Val Thr Val Thr Ala Pro Ala Pro Ala Ala Thr Gly Ser Pro Val Lys
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Lys Gln Arg Prc Leu Leu Pro Lys Glu Thr Ala Pro Ala Val Gln Arg
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Val Val Trp Asn Ser Ser Ser Lys Phe Gln Thr Ser Ser Gln Lys Trp
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His Met Gln Lys Met Gln Arg Gln Gln Gln Gln Gln Gln Asn
835 840 845

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850 855 860

Gln Ala Val Lys Ala Val Gln Gln Lys Glu Ile Thr Gln Ser Pro Ser
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Thr Ser Ser Gly Ser Met Ser Thr Leu Val Ser Ser Val Asn Ala Asp
900 905 910

Leu Pro Ile Ala Thr Ala Ser Ala Asp Val Ala Ala Asp Ile Ala Lys
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Tyr Thr Ser Lys Met Met Asp Ala Ile Lys Gly Thr Met Thr Glu Ile
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Tyr Asn Asp Leu Ser Lys Asn Thr Thr Gly Ser Thr Ile Ala Glu Ile
945 950 955 960

Arg Arg Leu Arg Ile Glu Ile Glu Lys Leu Gln Trp Leu His Gln Gln
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Glu Leu Ser Glu Met Lys His Asn Leu Glu Leu Thr Met Ala Glu Met
980 985 990

Arg Gln Ser Leu Glu Gln Glu Arg Asp Arg Leu Ile Ala Glu Val Lys
995 1000 1005

Lys Gln Leu Glu Leu Glu Lys Gln Gln Ala Val Asp Glu Thr Lys
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Lys Lys Gln Trp Cys Ala Asn Cys Lys Lys Glu Ala Ile Phe Tyr
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Cys Cys Trp Asn Thr Ser Tyr Cys Asp Tyr Pro Cys Gln Gln Ala
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His Trp Pro Glu His Met Lys Ser Cys Thr Gln Ser Ala Thr Ala
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Pro Gln Gln Glu Ala Asp Ala Glu Val Asn Thr Glu Thr Leu Asn
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His Gln Pro His Pro Asn Tyr Pro Ala Gln Lys Tyr His Ser Arg
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210 215 220	
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225 230 235 240	
cgt aaa gca tgt gcc tct ttt ata cga acc agg ctt ctg ctt cag ttt Leu Lys Ala Cys Ala Ser Phe Ile Arg Thr Arg Leu Leu Gln Phe	827
245 250 255	

acc caa cct cag caa aca tcg ttt gct ttg gag agg aac tta agg act		875	
Thr Gln Pro Gln Gln Thr Ser Phe Ala Leu Glu Arg Asn Leu Arg Thr			
260	265	270	
cag cag gaa att gaa gat aaa atg aaa ggg ttc agc ttc aaa gaa gac		923	
Gln Gln Glu Ile Glu Asp Lys Met Lys Gly Phe Ser Phe Lys Glu Asp			
275	280	285	
act ttg ctg ttg ata gct gag gtt atg gga gaa gat atc cca gaa aaa		971	
Thr Leu Leu Ile Ala Glu Val Met Gly Glu Asp Ile Pro Glu Lys			
290	295	300	
ata aaa gat gaa gtt cac cca gag gtg aag tgt gtt ggc tcc gta gcc		1019	
Ile Lys Asp Glu Val His Pro Glu Val Lys Cys Val Gly Ser Val Ala			
305	310	315	320
ctg act gcc ttg gtg act gta tcc tca gaa gaa ttt gaa gac aag tgg		1067	
Leu Thr Ala Leu Val Thr Val Ser Ser Glu Glu Phe Glu Asp Lys Trp			
325	330	335	
ttc aga aag atc aaa gac cat ttc tgt cca ttt gaa aat cag ttc cat		1115	
Phe Arg Lys Ile Lys Asp His Phe Cys Pro Phe Glu Asn Gln Phe His			
340	345	350	
aca gag ata caa atc ttg gct tagtgggtta taaaaaacaa aaccacaaat		1166	
Thr Glu Ile Gln Ile Leu Ala			
355			
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Leu Thr Leu Lys Lys Phe Lys Gly Asp Leu Ala Tyr Arg Arg Gln Glu		
35	40	45

Tyr Gln Lys Ala Leu Gln Glu Tyr Ser Ser Ile Ser Glu Lys Leu Ser		
50	55	60

Ser Thr Asn Phe Ala Met Lys Arg Asp Val Gln Glu Gly Gln Ala Arg			
65	70	75	80

Cys Leu Ala His Leu Gly Arg His Met Glu Ala Leu Glu Ile Ala Ala		
85	90	95

Asn Leu Glu Asn Lys Ala Thr Asn Thr Asp His Leu Thr Thr Val Leu
100 105 110

Tyr Ieu Gln Ieu Ala Ile Cys Ser Ser Leu Gln Asn Leu Glu Lys Thr
115 120 125

Ile Phe Cys Leu Gln Lys Leu Ile Ser Leu His Pro Phe Asn Pro Trp
130 135 140

Asn Trp Gly Lys Leu Ala Glu Ala Tyr Leu Asn Leu Gly Pro Ala Leu
145 150 155 160

Ser Ala Ala Leu Ala Ser Ser Gln Lys Gln His Ser Phe Thr Ser Ser
165 170 175

Asp Lys Thr Ile Lys Ser Phe Phe Pro His Ser Gly Lys Asp Cys Leu
180 185 190

Leu Cys Phe Pro Glu Thr Leu Pro Glu Ser Ser Leu Phe Ser Val Glu
195 200 205

Ala Asn Ser Ser Asn Ser Gln Lys Asn Glu Lys Ala Leu Thr Asn Ile
210 215 220

Gln Asn Cys Met Ala Glu Lys Arg Glu Thr Val Leu Ile Glu Thr Gln
225 230 235 240

Leu Lys Ala Cys Ala Ser Phe Ile Arg Thr Arg Leu Leu Leu Gln Phe
245 250 255

Thr Gln Pro Gln Gln Thr Ser Phe Ala Leu Glu Arg Asn Leu Arg Thr
260 265 270

Gln Gln Glu Ile Glu Asp Lys Met Lys Gly Phe Ser Phe Lys Glu Asp
275 280 285

Thr Leu Leu Leu Ile Ala Glu Val Met Gly Glu Asp Ile Pro Glu Lys
290 295 300

Ile Lys Asp Glu Val His Pro Glu Val Lys Cys Val Gly Ser Val Ala
305 310 315 320

Leu Thr Ala Leu Val Thr Val Ser Ser Glu Glu Phe Glu Asp Lys Trp
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Thr Glu Ile Gln Ile Leu Ala
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Arg Ala Val Leu Ala Glu Leu Asn Ala Ser Leu Leu Gly Met Arg Val
 15 20 25

aac aat gtt tat gat gtg gat aat aag aca tac ctt att cgt ctt caa 149
Asn Asn Val Tyr Asp Val Asp Asn Lys Thr Tyr Leu Ile Arg Leu Gln
 30 35 40

aaa ccg gac ttt aaa gct aca ctt tta ctt gaa tct ggc ata cga att 197
Lys Pro Asp Phe Lys Ala Thr Leu Leu Leu Glu Ser Gly Ile Arg Ile
 45 50 55

cat aca aca gaa ttt gag tgg cct aag aat atg atg ccg tct agt ttt 245
His Thr Thr Glu Phe Glu Trp Pro Lys Asn Met Met Pro Ser Ser Phe
 60 65 70

gcc atg aag tgc cga aaa cat ttg aag agt cgg aga tta gtc agt gca 293
Ala Met Lys Cys Arg Lys His Leu Lys Ser Arg Arg Leu Val Ser Ala
 75 80 85 90

aaa cag ctt ggt gtg gat aga att gta gat ttt caa ttt gga agt gat 341
Lys Gln Leu Gly Val Asp Arg Ile Val Asp Phe Gln Phe Gly Ser Asp
 95 100 105

gaa gct gct tac cat tta atc att gag ctc tat gat agg ggg aac att 389
Glu Ala Ala Tyr His Leu Ile Glu Leu Tyr Asp Arg Gly Asn Ile
 110 115 120

gtt ctt aca gat tat gag tac gta att tta aat att cta agg ttt cga 437
Val Leu Thr Asp Tyr Glu Tyr Val Ile Leu Asn Ile Leu Arg Phe Arg
 125 130 135

act gat gag gca gat gat gtt aaa ttt gct gtt cgt gaa cgc tat cca 485
Thr Asp Glu Ala Asp Asp Val Lys Phe Ala Val Arg Glu Arg Tyr Pro
 140 145 150

ctt gat cat gct aga gct gct gaa cct ttg ctt act ttg gaa agg ttg 533
Leu Asp His Ala Arg Ala Ala Glu Pro Leu Leu Thr Leu Glu Arg Leu
 155 160 165 170

act gaa ata gta gcc agc gca cct aag ggt gaa cta ctg aag agg gtg 581
Thr Glu Ile Val Ala Ser Ala Pro Lys Gly Glu Leu Leu Lys Arg Val
 175 180 185

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tta gaa aat gga ttc tcg ggt aat gtc aaa gtg gat gaa aaa ctt gaa Leu Glu Asn Gly Phe Ser Gly Asn Val Lys Val Asp Glu Lys Leu Glu 205 210 215	677
aat aaa gat att gaa aaa gta ctt gtt tct ctg cag aaa gca gaa gac Thr Lys Asp Ile Glu Lys Val Leu Val Ser Leu Gln Lys Ala Glu Asp 220 225 230	725
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ata ctg acg tat gag gaa ttt cat cct ttc ttg ttt tct caa cat tca Ile Leu Thr Tyr Glu Glu Phe His Pro Phe Leu Phe Ser Gln His Ser 270 275 280	869
caa tgt cca tat ata gaa ttt gaa tca ttt gac aag gcg gtg gat gaa Gln Cys Pro Tyr Ile Glu Phe Glu Ser Phe Asp Lys Ala Val Asp Glu 285 290 295	917
ttt tat tcc aag ata gaa ggc cag aaa att gac tta aaa gct tta caa Phe Tyr Ser Lys Ile Glu Gly Gln Lys Ile Asp Leu Lys Ala Leu Gln 300 305 310	965
cag gaa aag caa gca ttg aag aaa tta gat aat gtt cga aag gat cac Gln Glu Lys Gln Ala Leu Lys Leu Asp Asn Val Arg Lys Asp His 315 320 325 330	1013
gaa aac aga ttg gaa gct ctt cag cag gct cag gaa ata gac aaa ctg Glu Asn Arg Leu Glu Ala Leu Gln Ala Gln Glu Ile Asp Lys Leu 335 340 345	1061
aaa gga gag ctc ata gaa atg aac cta caa ata gtt gac aga gcc att Lys Gly Glu Leu Ile Glu Met Asn Leu Gln Ile Val Asp Arg Ala Ile 350 355 360	1109
cag gta gtt cga agt gct tta gct aac cag ata gat tgg aca gaa att Gln Val Val Arg Ser Ala Leu Ala Asn Gln Ile Asp Trp Thr Glu Ile 365 370 375	1157
ggg tta att gtg aaa gaa gcc cag gct caa gga gac cct gtt gca agt Gly Leu Ile Val Lys Glu Ala Gln Ala Gln Gly Asp Pro Val Ala Ser 380 385 390	1205
gca atc aaa gaa tta aaa cta caa aca aac cat gtt aca atg ctg cta Ala Ile Lys Glu Leu Lys Leu Gln Thr Asn His Val Thr Met Leu Leu 395 400 405 410	1253
aga aat cca tac ttg tta tca gag gag gaa gat gat gat gtt gat ggt Arg Asn Pro Tyr Leu Leu Ser Glu Glu Asp Asp Asp Val Asp Gly 415 420 425	1301
gac gtc aat gtt gag aaa aat gaa act gaa cca cca aaa gga aaa aag Asp Val Asn Val Glu Lys Asn Glu Thr Glu Pro Pro Lys Gly Lys Lys 430 435 440	1349

aaa aaa caa aag aat aaa cag ctg cag aag cct cag aaa aat aag ccc Lys Lys Gln Lys Asn Lys Gln Leu Gln Lys Pro Gln Lys Asn Lys Pro 445 450 455	1397
tta ctt gta gat gtt gat ctc agc ttg tca gca tat gcc aat gcc aaa Leu Leu Val Asp Val Asp Leu Ser Leu Ser Ala Tyr Ala Asn Ala Lys 460 465 470	1445
aag tat tat gat cac aag aga tat gct gct aag aaa aca caa aag act Lys Tyr Tyr Asp His Lys Arg Tyr Ala Ala Lys Lys Thr Gln Lys Thr 475 480 485 490	1493
gtt gaa gct gct gag aag gca ttc aag tca gca gaa aag aaa aca aag Val Glu Ala Ala Glu Lys Ala Phe Lys Ser Ala Glu Lys Lys Thr Lys 495 500 505	1541
caa aca tta aaa gaa gtt cag act gtt acc tct att caa aaa gca aga Gln Thr Leu Lys Glu Val Gln Thr Val Thr Ser Ile Gln Lys Ala Arg 510 515 520	1589
aaa gta tat tgg ttt gag aaa ttt ctg tgg ttc att agc tca gag aac Lys Val Tyr Trp Phe Glu Lys Phe Leu Trp Phe Ile Ser Ser Glu Asn 525 530 535	1637
tat cta att ata ggt gga cga gat cag caa cag aat gaa ata att gtg Tyr Leu Ile Ile Gly Gly Arg Asp Gln Gln Asn Glu Ile Ile Val 540 545 550	1685
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ctg gca agt tgt aca agt gaa ctc ata tca gaa gaa atg gaa caa tta Leu Ala Ser Cys Thr Ser Glu Leu Ile Ser Glu Glu Met Glu Gln Leu 685 690 695	2117

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cct gtg gaa gta gaa ctc atg act cag gtt gac caa gag gat atc act Pro Val Glu Val Glu Leu Met Thr Gln Val Asp Gln Glu Asp Ile Thr 715 720 725 730	2213
ctt cag agt ggc aga gat gaa cta aat gag gag ctc att cag gaa gaa Leu Gln Ser Gly Arg Asp Glu Leu Asn Glu Glu Leu Ile Gln Glu Glu 735 740 745	2261
agc tct gaa gac gaa gga gaa tat gaa gag gtt aga aaa gat cag gat Ser Ser Glu Asp Glu Gly Glu Tyr Glu Glu Val Arg Lys Asp Gln Asp 750 755 760	2309
tct gtt ggt gaa atg aag gat gaa ggg gaa gag aca tta aat tat cct Ser Val Gly Glu Met Lys Asp Glu Gly Glu Glu Thr Leu Asn Tyr Pro 765 770 775	2357
gat act acc att gac ttg tct cac ctt caa ccc caa agg tcc atc cag Asp Thr Thr Ile Asp Leu Ser His Leu Gln Pro Gln Arg Ser Ile Gln 780 785 790	2405
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cag agc cgg aga cat ttg tca gcc aag gaa aga agg gaa atg aaa aag Gln Ser Arg Arg His Leu Ser Ala Lys Glu Arg Arg Glu Met Lys Lys 815 820 825	2501
aaa aaa ctt cca agt gac tca gga gat tta gaa gcg tta gag gga aag Lys Lys Leu Pro Ser Asp Ser Gly Asp Leu Glu Ala Leu Glu Gly Lys 830 835 840	2549
gat aaa gaa aaa gaa agt act gta cac att gaa act cat cag aac aca Asp Lys Glu Lys Ser Thr Val His Ile Glu Thr His Gln Asn Thr 845 850 855	2597
agc aaa aat gtt gcg gct gtg cag cca atg aaa cga gga caa aag agt Ser Lys Asn Val Ala Ala Val Gln Pro Met Lys Arg Gly Gln Lys Ser 860 865 870	2645
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cgt gaa ctt atc atg aag ttg ctg ggg tct gca ggt tca aac aaa gaa Arg Glu Leu Ile Met Lys Leu Leu Gly Ser Ala Gly Ser Asn Lys Glu 895 900 905	2741
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gac ttt gct gta gat gat cca cat gat gac aag gaa gag caa gat ctg Asp Phe Ala Val Asp Asp Pro His Asp Asp Lys Glu Glu Gln Asp Leu 935 960 965 970	2933
gat caa cag gga aat gag gaa aac cta ttt gat tct ttg aca ggc cag Asp Gln Gln Gly Asn Glu Glu Asn Leu Phe Asp Ser Leu Thr Gly Gln 975 980 985	2981
cca cat cct gaa gat gta cta ctg ttt gcc att cca ata tgt gcc cct Pro His Pro Glu Asp Val Leu Leu Phe Ala Ile Pro Ile Cys Ala Pro 990 995 1000	3029
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gga gtg cag aaa aag gga aaa gct gca aaa aca gcc ttg aat agt Gly Val Gln Lys Lys Gly Lys Ala Ala Lys Thr Ala Leu Asn Ser 1020 1025 1030	3119
ttc atg cat tcc aaa gaa gca aca gca aga gaa aaa gac tta ttc Phe Met His Ser Lys Glu Ala Thr Ala Arg Glu Lys Asp Leu Phe 1035 1040 1045	3164
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gtg aaa agt gtc tgc acc caa tct tct gaa cgt aaa aag gaa ata Val Lys Ser Val Cys Thr Gln Ser Ser Glu Arg Lys Lys Glu Ile 1065 1070 1075	3254
gct gaa atg aaa ttc taaaatattt gagaagagcc aattttatag cctttggaa Ala Glu Met Lys Phe 1080	3309
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35 40 45

Thr Leu Leu Leu Glu Ser Gly Ile Arg Ile His Thr Thr Glu Phe Glu
50 55 60

Trp Pro Lys Asn Met Met Pro Ser Ser Phe Ala Met Lys Cys Arg Lys
65 70 75 80

His Leu Lys Ser Arg Arg Leu Val Ser Ala Lys Gln Leu Gly Val Asp
85 90 95

Arg Ile Val Asp Phe Gln Phe Gly Ser Asp Glu Ala Ala Tyr His Leu
100 105 110

Ile Ile Glu Leu Tyr Asp Arg Gly Asn Ile Val Leu Thr Asp Tyr Glu
115 120 125

Tyr Val Ile Leu Asn Ile Leu Arg Phe Arg Thr Asp Glu Ala Asp Asp
130 135 140

Val Lys Phe Ala Val Arg Glu Arg Tyr Pro Leu Asp His Ala Arg Ala
145 150 155 160

Ala Glu Pro Leu Leu Thr Leu Glu Arg Leu Thr Glu Ile Val Ala Ser
165 170 175

Ala Pro Lys Gly Glu Leu Leu Lys Arg Val Leu Asn Pro Leu Leu Pro
180 185 190

Tyr Gly Pro Ala Leu Ile Glu His Cys Leu Leu Glu Asn Gly Phe Ser
195 200 205

Gly Asn Val Lys Val Asp Glu Lys Leu Glu Thr Lys Asp Ile Glu Lys
210 215 220

Val Leu Val Ser Leu Gln Lys Ala Glu Asp Tyr Met Lys Thr Thr Ser
225 230 235 240

Asn Phe Ser Gly Lys Gly Tyr Ile Ile Gln Lys Arg Glu Ile Lys Pro
245 250 255

Cys Leu Glu Ala Asp Lys Pro Val Glu Asp Ile Leu Thr Tyr Glu Glu
260 265 270

Phe His Pro Phe Leu Phe Ser Gln His Ser Gln Cys Pro Tyr Ile Glu
275 280 285

Phe Glu Ser Phe Asp Lys Ala Val Asp Glu Phe Tyr Ser Lys Ile Glu
290 295 300

Gly Gln Lys Ile Asp Leu Lys Ala Leu Gln Gln Glu Lys Gln Ala Leu
305 310 315 320

Lys Lys Leu Asp Asn Val Arg Lys Asp His Glu Asn Arg Leu Glu Ala
325 330 335

Leu Gln Gln Ala Gln Glu Ile Asp Lys Leu Lys Gly Glu Leu Ile Glu
340 345 350

Met Asn Leu Gln Ile Val Asp Arg Ala Ile Gln Val Val Arg Ser Ala
355 360 365

Leu Ala Asn Gln Ile Asp Trp Thr Glu Ile Gly Leu Ile Val Lys Glu
370 375 380

Ala Gln Ala Gln Gly Asp Pro Val Ala Ser Ala Ile Lys Glu Leu Lys
385 390 395 400

Leu Gln Thr Asn His Val Thr Met Leu Leu Arg Asn Pro Tyr Leu Leu
405 410 415

Ser Glu Glu Glu Asp Asp Val Asp Gly Asp Val Asn Val Glu Lys
420 425 430

Asn Glu Thr Glu Pro Pro Lys Gly Lys Lys Lys Gln Lys Asn Lys
435 440 445

Gln Leu Gln Lys Pro Gln Lys Asn Lys Pro Leu Leu Val Asp Val Asp
450 455 460

Leu Ser Leu Ser Ala Tyr Ala Asn Ala Lys Lys Tyr Tyr Asp His Lys
465 470 475 480

Arg Tyr Ala Ala Lys Lys Thr Gln Lys Thr Val Glu Ala Ala Glu Lys
485 490 495

Ala Phe Lys Ser Ala Glu Lys Lys Thr Lys Gln Thr Leu Lys Glu Val
500 505 510

Gln Thr Val Thr Ser Ile Gln Lys Ala Arg Lys Val Tyr Trp Phe Glu
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Lys Phe Leu Trp Phe Ile Ser Ser Glu Asn Tyr Leu Ile Ile Gly Gly
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Arg Asp Gln Gln Gln Asn Glu Ile Ile Val Lys Arg Tyr Leu Thr Pro
545 550 555 560

Gly Asp Ile Tyr Val His Ala Asp Leu His Gly Ala Thr Ser Cys Val
565 570 575

Ile Lys Asn Pro Thr Gly Glu Pro Ile Pro Pro Arg Thr Leu Thr Glu
580 585 590

Ala Gly Thr Met Ala Leu Cys Tyr Ser Ala Ala Trp Asp Ala Arg Val
595 600 605

Ile Thr Ser Ala Trp Trp Val Tyr His His Gln Val Ser Lys Thr Ala
610 615 620

Pro Thr Gly Glu Tyr Leu Thr Thr Gly Ser Phe Met Ile Arg Gly Lys
625 630 635 640

Lys Asn Phe Leu Pro Pro Ser Tyr Leu Met Met Gly Phe Ser Phe Leu
645 650 655

Phe Lys Val Asp Glu Ser Cys Val Trp Arg His Gln Gly Glu Arg Lys
660 665 670

Val Arg Val Gln Asp Glu Asp Met Glu Thr Leu Ala Ser Cys Thr Ser
675 680 685

Glu Leu Ile Ser Glu Glu Met Glu Gln Leu Asp Gly Gly Asp Thr Ser
690 695 700

Ser Asp Glu Asp Lys Glu Glu His Glu Thr Pro Val Glu Val Glu Leu
705 710 715 720

Met Thr Gln Val Asp Gln Glu Asp Ile Thr Leu Gln Ser Gly Arg Asp
725 730 735

Glu Leu Asn Glu Glu Leu Ile Gln Glu Glu Ser Ser Glu Asp Glu Gly
740 745 750

Glu Tyr Glu Glu Val Arg Lys Asp Gln Asp Ser Val Gly Glu Met Lys
755 760 765

Asp Glu Gly Glu Glu Thr Leu Asn Tyr Pro Asp Thr Thr Ile Asp Leu
770 775 780

Ser His Leu Gln Pro Gln Arg Ser Ile Gln Lys Leu Ala Ser Lys Glu
785 790 795 800

Glu Ser Ser Asn Ser Ser Asp Ser Lys Ser Gln Ser Arg Arg His Leu
805 810 815

Ser Ala Lys Glu Arg Arg Glu Met Lys Lys Lys Leu Pro Ser Asp
820 825 830

Ser Gly Asp Leu Glu Ala Leu Glu Gly Lys Asp Lys Glu Lys Glu Ser
835 840 845

Thr Val His Ile Glu Thr His Gln Asn Thr Ser Lys Asn Val Ala Ala
850 855 860

Val Gln Pro Met Lys Arg Gly Gln Lys Ser Lys Met Lys Lys Met Lys
865 870 875 880

Glu Lys Tyr Lys Asp Gln Asp Glu Glu Asp Arg Glu Leu Ile Met Lys
885 890 895

Leu Leu Gly Ser Ala Gly Ser Asn Lys Glu Glu Lys Gly Lys Lys Gly
900 905 910

Lys Lys Gly Lys Thr Lys Asp Glu Pro Val Lys Lys Gln Pro Gln Lys
915 920 925

Pro Arg Gly Gly Gln Arg Val Ser Asp Asn Ile Lys Lys Glu Thr Pro
930 935 940

Phe Leu Glu Val Ile Thr His Glu Leu Gln Asp Phe Ala Val Asp Asp
945 950 955 960

Pro His Asp Asp Lys Glu Glu Gln Asp Leu Asp Gln Gln Gly Asn Glu
965 970 975

Glu Asn Leu Phe Asp Ser Leu Thr Gly Gln Pro His Pro Glu Asp Val
980 985 990

Leu Leu Phe Ala Ile Pro Ile Cys Ala Pro Tyr Thr Thr Met Thr Asn
995 1000 1005

Tyr Lys Tyr Lys Val Lys Leu Thr Pro Gly Val Gln Lys Lys Gly
1010 1015 1020

Lys Ala Ala Lys Thr Ala Leu Asn Ser Phe Met His Ser Lys Glu
1025 1030 1035

Ala Thr Ala Arg Glu Lys Asp Leu Phe Arg Ser Val Lys Asp Thr
1040 1045 1050

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cgccaccctg caagttgcac cttctagaat cagcaagcca agtcctctc acccagcgta 180
atgatgcgga aatgcaaattt caccatcatg ttgtgaccca tattgcgaaa attagaaaaaa 240
aggaagttgt gtttcgttat tgacacgaaat tcagcccaga ggagaaactc gtcgccttc 300
agaagacagt acctcctaaa tggctctact ttgaacctgc tggcaagga agagattttc 360
aaggaaacca tctaccgtgt gcaagctcct gccggccaac cccagacccc agcacggagc 420
caguacgcctg tgcccgccaa ccctcagcat cctcctcaga aaggctggtg gcatcaggaa 480
gccctggcc agcctccacc tgagcccagt gagctcagct ttaagg atg gag tca 535
Met Glu Ser
1

ggc agg ggg tcc tca acc cct cca gga ccc att gct gcc cta ggg atg 583
Gly Arg Gly Ser Ser Thr Pro Pro Gly Pro Ile Ala Ala Leu Gly Met
5 10 15

cca gac act ggg cct ggc agt tcc tcc cta ggg aag ctt cag gcg ctc 631
Prc Asp Thr Gly Prc Gly Ser Ser Ser Leu Gly Lys Leu Gln Ala Leu
55 25 30 35

sct gtt ggg ccc aga gcc cac tgt ggg gac cct gtc agc ctg gct gca 679
Pro Val Gly Pro Arg Ala His Cys Gly Asp Pro Val Ser Leu Ala Ala

40	45	50	
gtt tgg gac ggc tct cca gac ata ggc ccc acg gga gag ctg agt ggt Ala Gly Asp Gly Ser Pro Asp Ile Gly Pro Thr Gly Glu Leu Ser Gly 55	60	65	727
agc tta aag atc ccc aac cgg gac agc ggg atc gac agt cca tcc tcc Ser Leu Lys Ile Pro Asn Arg Asp Ser Gly Ile Asp Ser Pro Ser Ser 70	75	80	775
agt gtg gct gga gag aac ttt ccc tgc gag gag ggc ttg gag gct ggc Ser Val Ala Gly Glu Asn Phe Pro Cys Glu Glu Gly Leu Glu Ala Gly 85	90	95	823
cca agc ccc act gta ctg ggg gcg cac gca gag atg gcc ctg gac agc Pro Ser Pro Thr Val Leu Gly Ala His Ala Glu Met Ala Leu Asp Ser 100	105	110	871
cag gtc ccg aag gtc acc ccc cag gag gag gcg gac agc gac gtg ggt Gln Val Pro Lys Val Thr Pro Gln Glu Ala Asp Ser Asp Val Gly 120	125	130	919
gag gaa cct gac tct gag aac acc ccc cag aag gct gac aag gat gcc Glu Glu Pro Asp Ser Glu Asn Thr Pro Gln Lys Ala Asp Lys Asp Ala 135	140	145	967
ggc ctg gcc cag cac tct ggc ccc cag aag ctt ctc cac att gcc cag Gly Leu Ala Gln His Ser Gly Pro Gln Lys Leu Leu His Ile Ala Gln 150	155	160	1015
gag ctc ctg cac acc gag gag acc tat gtg aag cgg ctg cac ctg ctg Glu Leu Leu His Thr Glu Thr Tyr Val Lys Arg Leu His Leu Leu 165	170	175	1063
gac cag gtt ttc tgc acc agg ctg acg gat gcg ggg atc cct cca gaa Asp Gln Val Phe Cys Thr Arg Leu Thr Asp Ala Gly Ile Pro Pro Glu 180	185	190	1111
gtc atc atg ggc ata ttc tct aac atc tcc tcc atc cac cgc ttc cac Val Ile Met Gly Ile Phe Ser Asn Ile Ser Ser Ile His Arg Phe His 200	205	210	1159
ggg cag ttc ctg ctg ccg gag ctg aag acg cgg atc acg gag gag tgg Gly Gln Phe Leu Leu Pro Glu Leu Lys Thr Arg Ile Thr Glu Glu Trp 215	220	225	1207
gac aca aac cca cgg ctc ggg gac atc ctg cag aag ctg gcc cca ttc Asp Thr Asn Pro Arg Leu Gly Asp Ile Leu Gln Lys Leu Ala Pro Phe 230	235	240	1255
ctg aag atg tac ggc gag tat gtc aag aac ttt gac cga gcc gta ggg Leu Lys Met Tyr Gly Glu Tyr Val Lys Asn Phe Asp Arg Ala Val Gly 245	250	255	1303
ctg gtg agc acg tgg acc cag cgc tcc cca ctg ttt aaa gac gtc gtc Leu Val Ser Thr Trp Thr Gln Arg Ser Pro Leu Phe Lys Asp Val Val 260	265	270	1351
cac agc atc cag aag cag gag gta tgc ggg aac ctg acg ctg cag cac His Ser Ile Gln Lys Gln Glu Val Cys Gly Asn Leu Thr Leu Gln His 280	285	290	1399
cac atg ctg gag ccc gtg cag agg gtc ccc cgg tac gag ctg ctg ctc His Met Leu Glu Pro Val Gln Arg Val Pro Arg Tyr Glu Leu Leu Leu			1447

295	300	305	
aag gac tat ctg aag agg ctc ccg cag gac gcc cca gac cgg aag gat Lys Asp Tyr Leu Lys Arg Leu Pro Gln Asp Ala Pro Asp Arg Lys Asp 310	315	320	1495
gcg gag agg tcc ttg gag ctc atc tcc aca gcc gcc aac cac tcc aat Ala Glu Arg Ser Leu Glu Leu Ile Ser Thr Ala Ala Asn His Ser Asn 325	330	335	1543
gct gcc att cgg aaa gtg gag aaa atg cac aag ctc ttg gag gtg tac Ala Ala Ile Arg Lys Val Glu Lys Met His Lys Leu Leu Glu Val Tyr 340	345	350	1591
gag cag ctg ggt ggg gaa gaa gac att gtc aac ccg gcc aat gaa ctg Glu Gln Leu Gly Gly Glu Asp Ile Val Asn Pro Ala Asn Glu Leu 360	365	370	1639
atc aag gag ggc caa atc cag aaa ctg tca gcc aag aac ggc acc ccc Ile Lys Glu Gly Gln Ile Gln Lys Leu Ser Ala Lys Asn Gly Thr Pro 375	380	385	1687
cag gac cgc cac ctc ttc ctg ttc aac agc atg atc ctt tac tgt gtg Gln Asp Arg His Leu Phe Leu Phe Asn Ser Met Ile Leu Tyr Cys Val 390	395	400	1735
ccc aag ctg cgg ctc atg ggc cag aag ttc agc gtc cgg gag aag atg Pro Lys Leu Arg Leu Met Gly Gln Lys Phe Ser Val Arg Glu Lys Met 405	410	415	1783
gac atc tca ggc ctc cag gtg cag gat atc gtc aag cca aac aca gca Asp Ile Ser Gly Leu Gln Val Gln Asp Ile Val Lys Pro Asn Thr Ala 420	425	430	1831
cat aca ttc atc ata acg gga aga aaa agg tcc ctg gag ctg cag acg His Thr Phe Ile Ile Thr Gly Arg Lys Arg Ser Leu Glu Leu Gln Thr 440	445	450	1879
cgg aca gag gaa gag aag aaa gaa tgg att cag atc atc cag gcc acc Arg Thr Glu Glu Lys Lys Glu Trp Ile Gln Ile Ile Gln Ala Thr 455	460	465	1927
atc gag aag cac aaa cag aac agc gaa acc ttc aag gct ttt ggt ggc Ile Glu Lys His Lys Gln Asn Ser Glu Thr Phe Lys Ala Phe Gly Gly 470	475	480	1975
gcc ttc agc cag gat gag gac ccc agc ctc tct cca gac atg cct atc Ala Phe Ser Gln Asp Glu Asp Pro Ser Leu Ser Pro Asp Met Pro Ile 485	490	495	2023
acg agc acc agc cct gtg gag cct gtg gtg acc acc gaa ggc agt tcg Thr Ser Thr Ser Pro Val Glu Pro Val Val Thr Thr Glu Gly Ser Ser 500	505	510	2071
ggt gca gca ggg ctc gag ccc aga aaa cta tcc tct aag acc acc aga cgt Gly Ala Ala Gly Leu Glu Pro Arg Lys Leu Ser Ser Lys Thr Arg Arg 520	525	530	2119
gac aag gag aag cag agc tgt aag agc tgt ggt gag acc ttc aac tcc Asp Lys Glu Lys Gln Ser Cys Lys Ser Cys Gly Glu Thr Phe Asn Ser 535	540	545	2167
atc acc aag agg agg cat cac tgc aag ctg tgt ggg gcg gtc atc tgt Ile Thr Lys Arg Arg His His Cys Lys Leu Cys Gly Ala Val Ile Cys			2215

550	555	560	
ggg aag tgc tcc gag ttc aag gcc gag aac agc cgg cag agc cgt gtc Sly Lys Cys Ser Glu Phe Lys Ala Glu Asn Ser Arg Gln Ser Arg Val 565 570 575			2263
tgc aga gat tgt ttc ctg aca cag cca gtg gcc cct gag agc aca gag Cys Arg Asp Cys Phe Leu Thr Gln Pro Val Ala Pro Glu Ser Thr Glu 580 585 590 595			2311
aag aca ccc act gca gac ccc cag ccc agc ctg ctc tgc ggc ccc ctg Lys Thr Pro Thr Ala Asp Pro Gln Pro Ser Leu Leu Cys Gly Pro Leu 600 605 610			2359
cgg ctg tca gag agc ggt gag acc tgg agc gag gtg tgg gcc gcc atc Arg Leu Ser Glu Ser Gly Glu Thr Trp Ser Glu Val Trp Ala Ala Ile 615 620 625			2407
ccc atg tca gat ccc cag gtg ctg cac ctg cag gga ggc agc cag gac Pro Met Ser Asp Pro Gln Val Leu His Leu Gln Gly Ser Gln Asp 630 635 640			2455
ggc cgg ctg ccc cgc acc atc cct ctc ccc agc tgc aaa ctg agt gtg Gly Arg Leu Pro Arg Thr Ile Pro Leu Pro Ser Cys Lys Leu Ser Val 645 650 655			2503
ccg gac cct gag gag agg ctg gac tcg ggg cat gtg tgg aag ctg cag Pro Asp Pro Glu Glu Arg Leu Asp Ser Gly His Val Trp Lys Leu Gln 660 665 670 675			2551
tgg gcc aag cag tcc tgg tac ctg agc gcc tcc tcc gca gag ctg cag Trp Ala Lys Gln Ser Trp Tyr Leu Ser Ala Ser Ser Ala Glu Leu Gln 680 685 690			2599
cag cag tgg ctg gaa acc cta agc act gct gcc cat ggg gac acg gcc Gln Gln Trp Leu Glu Thr Leu Ser Thr Ala Ala His Gly Asp Thr Ala 695 700 705			2647
cag gac agc ccg ggg gcc ctg cag ctt cag gtc cct atg ggc gca gct Gln Asp Ser Pro Gly Ala Leu Gln Leu Gln Val Pro Met Gly Ala Ala 710 715 720			2695
gct ccg tgagctgagt ctccccactgc cctgcacacc accacattgg acctgtgctg Ala Pro 725			2751
tcctgggagg tgggttgttgg a gccccatga agagcgccct ggactgctga ggggtggcca acagccccaga gctcaggaca cttggctttg gggggaaagga aactgaggcc cagagagggg caaccactgg ccaagggtca cccagcaagt tttggctaag agcctggcct ccagccccag cagtggtggcc cagagcaggc gccgactgcc aaagtaacca tcatccatat gggccgtgt gtgatgctgg cccggaaaggc agaaagaggc agcatggca ctgccaggga cagccacatc ctgctggct gcagcgtgg ccaccccgcc tctgcccagc ctgtctacac cgtgtgagct gaatcgtgac ttgctttcca cctcctttct ctgtcctctc ctgaggttct gcctgcagcc cccaggaggt gggcctgccc catccttagct ggactcatgg ttcctaaata accacgctca gaagctctgc taggacttac cccagccact gagtggcagg cgcatgagat ttgtggctgt 3291			2811
			2871
			2931
			2991
			3051
			3111
			3171
			3231

tctgtatgtt agtggcacac agtgcttatac tgcataaata aacactggcc accagcaaaa 3351
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 3411
aaaaaaaaaa aaaaaaaaaa aaaaaaaa 3438

<210> 30
<211> 725
<212> PRT
<213> Homo sapiens

<400> 30

Met Glu Ser Gly Arg Gly Ser Ser Thr Pro Pro Gly Pro Ile Ala Ala
1 5 10 15

Leu Gly Met Pro Asp Thr Gly Pro Gly Ser Ser Ser Leu Gly Lys Leu
20 25 30

Gln Ala Leu Pro Val Gly Pro Arg Ala His Cys Gly Asp Pro Val Ser
35 40 45

Leu Ala Ala Ala Gly Asp Gly Ser Pro Asp Ile Gly Pro Thr Gly Glu
50 55 60

Leu Ser Gly Ser Leu Lys Ile Pro Asn Arg Asp Ser Gly Ile Asp Ser
65 70 75 80

Pro Ser Ser Ser Val Ala Gly Glu Asn Phe Pro Cys Glu Glu Gly Leu
85 90 95

Glu Ala Gly Pro Ser Pro Thr Val Leu Gly Ala His Ala Glu Met Ala
100 105 110

Leu Asp Ser Gln Val Pro Lys Val Thr Pro Gln Glu Glu Ala Asp Ser
115 120 125

Asp Val Gly Glu Glu Pro Asp Ser Glu Asn Thr Pro Gln Lys Ala Asp
130 135 140

Lys Asp Ala Gly Leu Ala Gln His Ser Gly Pro Gln Lys Leu Leu His
145 150 155 160

Ile Ala Gln Glu Leu Leu His Thr Glu Glu Thr Tyr Val Lys Arg Leu
165 170 175

His Leu Leu Asp Gln Val Phe Cys Thr Arg Leu Thr Asp Ala Gly Ile
180 185 190

Pro Pro Glu Val Ile Met Gly Ile Phe Ser Asn Ile Ser Ser Ile His
195 200 205

Arg Phe His Gly Gln Phe Leu Leu Pro Glu Leu Lys Thr Arg Ile Thr
210 215 220

Glu Glu Trp Asp Thr Asn Pro Arg Leu Gly Asp Ile Leu Gln Lys Leu
225 230 235 240

Ala Pro Phe Leu Lys Met Tyr Gly Glu Tyr Val Lys Asn Phe Asp Arg
245 250 255

Ala Val Gly Leu Val Ser Thr Trp Thr Gln Arg Ser Pro Leu Phe Lys
260 265 270

Asp Val Val His Ser Ile Gln Lys Gln Glu Val Cys Gly Asn Leu Thr
275 280 285

Leu Gln His His Met Leu Glu Pro Val Gln Arg Val Pro Arg Tyr Glu
290 295 300

Leu Leu Leu Lys Asp Tyr Leu Lys Arg Leu Pro Gln Asp Ala Pro Asp
305 310 315 320

Arg Lys Asp Ala Glu Arg Ser Leu Glu Leu Ile Ser Thr Ala Ala Asn
325 330 335

His Ser Asn Ala Ala Ile Arg Lys Val Glu Lys Met His Lys Leu Leu
340 345 350

Glu Val Tyr Glu Gln Leu Gly Gly Glu Glu Asp Ile Val Asn Pro Ala
355 360 365

Asn Glu Leu Ile Lys Glu Gly Gln Ile Gln Lys Leu Ser Ala Lys Asn
370 375 380

Gly Thr Pro Gln Asp Arg His Leu Phe Leu Phe Asn Ser Met Ile Leu
385 390 395 400

Tyr Cys Val Pro Lys Leu Arg Leu Met Gly Gln Lys Phe Ser Val Arg
405 410 415

Glu Lys Met Asp Ile Ser Gly Leu Gln Val Gln Asp Ile Val Lys Pro
420 425 430

Asn Thr Ala His Thr Phe Ile Ile Thr Gly Arg Lys Arg Ser Leu Glu
435 440 445

Leu Gln Thr Arg Thr Glu Glu Glu Lys Lys Glu Trp Ile Gln Ile Ile
450 455 460

Gln Ala Thr Ile Glu Lys His Lys Gln Asn Ser Glu Thr Phe Lys Ala
465 470 475 480

Phe Gly Gly Ala Phe Ser Gln Asp Glu Asp Pro Ser Leu Ser Pro Asp
485 490 495

Met Pro Ile Thr Ser Thr Ser Pro Val Glu Pro Val Val Thr Thr Glu
500 505 510

Gly Ser Ser Gly Ala Ala Gly Leu Glu Pro Arg Lys Leu Ser Ser Lys
515 520 525

Thr Arg Arg Asp Lys Glu Lys Gln Ser Cys Lys Ser Cys Gly Glu Thr
530 535 540

Phe Asn Ser Ile Thr Lys Arg Arg His His Cys Lys Leu Cys Gly Ala
545 550 555 560

Val Ile Cys Gly Lys Cys Ser Glu Phe Lys Ala Glu Asn Ser Arg Gln
565 570 575

Ser Arg Val Cys Arg Asp Cys Phe Leu Thr Gln Pro Val Ala Pro Glu
580 585 590

Ser Thr Glu Lys Thr Pro Thr Ala Asp Pro Gln Pro Ser Leu Leu Cys
595 600 605

Gly Pro Leu Arg Leu Ser Glu Ser Gly Glu Thr Trp Ser Glu Val Trp
610 615 620

Ala Ala Ile Pro Met Ser Asp Pro Gln Val Leu His Leu Gln Gly Gly
625 630 635 640

Ser Gln Asp Gly Arg Leu Pro Arg Thr Ile Pro Leu Pro Ser Cys Lys
645 650 655

Leu Ser Val Pro Asp Pro Glu Glu Arg Leu Asp Ser Gly His Val Trp
660 665 670

Lys Leu Gln Trp Ala Lys Gln Ser Trp Tyr Leu Ser Ala Ser Ser Ala
675 680 685

Glu Leu Gln Gln Gln Trp Leu Glu Thr Leu Ser Thr Ala Ala His Gly
690 695 700

Asp Thr Ala Gln Asp Ser Pro Gly Ala Leu Gln Leu Gln Val Pro Met
705 710 715 720

Gly Ala Ala Ala Pro
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<213> Homo sapiens

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<221> CDS
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<400> 31		
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cgaccgcgcg ctcgcggcgc cgctcctgct gcagccccag ggcccctcgc cgccgcccacc	120	
atg gac gcc atc aag aag aag atg cag atg ctg aag ctc gac aag gag	168	
Met Asp Ala Ile Lys Lys Met Gln Met Leu Lys Leu Asp Lys Glu		
1 5 10 15		
aac gcc ttg gat cga gct gag cag gcg gag gcc gac aag aag gcg gcg	216	
Asn Ala Leu Asp Arg Ala Glu Gln Ala Glu Ala Asp Lys Lys Ala Ala		
20 25 30		
gaa gac agg agc aag cag ctc gag gag gac atc gcg gcc aag gag aag	264	
Glu Asp Arg Ser Lys Gln Leu Glu Glu Asp Ile Ala Ala Lys Glu Lys		
35 40 45		
ttg ctg cgg gtg tcg gag gac gag cgg gac cgg gtg ctg gag gag ctg	312	
Leu Leu Arg Val Ser Glu Asp Glu Arg Asp Arg Val Leu Glu Glu Leu		
50 55 60		
cac aag gcg gag gac agc ctc ctg gcc gaa gag gcc gcc gcc aag	360	
His Lys Ala Glu Asp Ser Leu Leu Ala Ala Glu Glu Ala Ala Lys		
65 70 75 80		
gct gaa gcc gac gta gct tct ctg aac aga cgc atc cag ctg gtt gag	408	
Ala Glu Ala Asp Val Ala Ser Leu Asn Arg Arg Ile Gln Leu Val Glu		
85 90 95		
gaa gag ttg gat cgt gcc cag gag cgt ctg gca aca gct ttg cag aag	456	
Glu Glu Leu Asp Arg Ala Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys		
100 105 110		
ctg gag gaa gct gag aag gca gca gat gag agt gag aga ggc atg aaa	504	
Leu Glu Ala Glu Lys Ala Ala Asp Glu Ser Glu Arg Gly Met Lys		
115 120 125		
gtc att gag agt cga gcc caa aaa gat gaa gaa aaa atg gaa att cag	552	
Val Ile Glu Ser Arg Ala Gln Lys Asp Glu Glu Lys Met Glu Ile Gln		
130 135 140		
gag atc caa ctg aaa gag gca aag cac att gct gaa gat gcc gac cgc	600	
Glu Ile Gln Leu Lys Glu Ala Lys His Ile Ala Glu Asp Ala Asp Arg		
145 150 155 160		
aaa tat gaa gag gtg gcc cgt aag ctg gtc atc att gag agc gac ctg	648	
Lys Tyr Glu Glu Val Ala Arg Lys Leu Val Ile Ile Glu Ser Asp Leu		

165	170	175	
gaa cgt gca gag gag cg ^g gct gag ctc tca gaa ggc caa gtc cga cag Glu Arg Ala Glu Glu Arg Ala Glu Leu Ser Glu Gly Gln Val Arg Gln 180	185	190	696
ctg gaa gaa caa tta aga ata atg gat cag acc ttg aaa gca tta atg Leu Glu Glu Gln Leu Arg Ile Met Asp Gln Thr Leu Lys Ala Leu Met 195	200	205	744
gct gca gag gat aag tac tcg cag aag gaa gac aga tat gag gaa gag Ala Ala Glu Asp Lys Tyr Ser Gln Lys Glu Asp Arg Tyr Glu Glu Glu 210	215	220	792
atc aag gtc ctt tcc gac aag ctg aag gag gct gag act cgg gct gag Ile Lys Val Leu Ser Asp Lys Leu Lys Glu Ala Glu Thr Arg Ala Glu 225	230	235	840
ttt gcg gag agg tca gta act aaa ttg gag aaa agc att gat gac tta Phe Ala Glu Arg Ser Val Thr Lys Leu Glu Lys Ser Ile Asp Asp Leu 245	250	255	888
gaa gag aaa gtg gct cat gcc aaa gaa aac ctt agt atg cat cag Glu Glu Lys Val Ala His Ala Lys Glu Glu Asn Leu Ser Met His Gln 260	265	270	936
atg ctg gat cag act tta ctg gag tta aac aac atg tgaaaacctc Met Leu Asp Gln Thr Leu Leu Glu Leu Asn Asn Met 275	280		982
cttagctg ^c accacattct ttcattttgt ttgtttgt ttgtttta aacacctgct taccccttaa atgcaattta ttactttta ccactgtcac agaaacatcc acaagatacc agctagg ^t ca ggggg ^t gggg aaaacacata caaaaaggca agcccatgtc agggcgatcc tggttcaa ^a at gtgccatttc ccgggttgat gctgccacac ttgttagaga gtttagcaac acagtgtgct tagtcagcgt aggaatcctc actaaagcag gagaagttcc attcaaagt ^g ccaatgata ^g agtcaacagg aaggtaatg ttggaaacac aatcaggtgt ggattgg ^t gc tactt ^t gaac aaaagg ^t ccc cctgtgg ^t ct ttgttcaac attgtacaat gtagaactct gtccaacact aatttatttt gtcttgagtt ttactacaag atgagactat ggatccc ^t gca tgcctgaatt cactaaagcc aagggtctgt aagccacgct gctttctga gacttccatt cctttctgat tggcacacgt gcagctcatg acaatctgta ggataacaat cagtgtggat ttccactctt tt ^c agtcctt catgttaaag atttagacac cacatacaac tggtaaagga cgtttcttg agagtttaa ctatatgtaa acattgtata atgatatgga ataaaatgca cattgttagga cattttctaa aaaaaaaaaa aaaaaa		1042	
			1102
			1162
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<213> Homo sapiens
<400> 32

Met Asp Ala Ile Lys Lys Met Gln Met Leu Lys Leu Asp Lys Glu
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Asn Ala Leu Asp Arg Ala Glu Gln Ala Glu Ala Asp Lys Lys Ala Ala
20 25 30

Glu Asp Arg Ser Lys Gln Leu Glu Glu Asp Ile Ala Ala Lys Glu Lys
35 40 45

Leu Leu Arg Val Ser Glu Asp Glu Arg Asp Arg Val Leu Glu Glu Leu
50 55 60

His Lys Ala Glu Asp Ser Leu Leu Ala Ala Glu Glu Ala Ala Ala Lys
65 70 75 80

Ala Glu Ala Asp Val Ala Ser Leu Asn Arg Arg Ile Gln Leu Val Glu
85 90 95

Glu Glu Leu Asp Arg Ala Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys
100 105 110

Leu Glu Glu Ala Glu Lys Ala Ala Asp Glu Ser Glu Arg Gly Met Lys
115 120 125

Val Ile Glu Ser Arg Ala Gln Lys Asp Glu Glu Lys Met Glu Ile Gln
130 135 140

Glu Ile Gln Leu Lys Glu Ala Lys His Ile Ala Glu Asp Ala Asp Arg
145 150 155 160

Lys Tyr Glu Glu Val Ala Arg Lys Leu Val Ile Ile Glu Ser Asp Leu
165 170 175

Glu Arg Ala Glu Glu Arg Ala Glu Leu Ser Glu Gly Gln Val Arg Gln
180 185 190

Leu Glu Glu Gln Leu Arg Ile Met Asp Gln Thr Leu Lys Ala Leu Met
195 200 205

Ala Ala Glu Asp Lys Tyr Ser Gln Lys Glu Asp Arg Tyr Glu Glu Glu
210 215 220

Ile Lys Val Leu Ser Asp Lys Leu Lys Glu Ala Glu Thr Arg Ala Glu
225 230 235 240

Phe Ala Glu Arg Ser Val Thr Lys Leu Glu Lys Ser Ile Asp Asp Leu
245 250 255

Glu Glu Lys Val Ala His Ala Lys Glu Glu Asn Leu Ser Met His Gln
260 265 270

Met Leu Asp Gln Thr Leu Leu Glu Leu Asn Asn Met
275 280

<210> 33
<211> 1138
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<222> (231)..(965)
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<400> 33
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gctgcgactt ccggactgct cctggccgca gggggcgccg ccgtcgcaca gagaggcctg 120
ggcggggcgg accggcgctg ggcagccagg acagccgcgg cagccgggtc cgcagggcag 180
cagccggcct ctcccactgc agccctcccc cccgcctacc gtccggcgcg atg gcg 236
Met Ala
1
ggg agt agc tcg ctg gag gcg gtg cgc agg aag atc cgg agc ctg cag 284
Gly Ser Ser Ser Leu Glu Ala Val Arg Arg Lys Ile Arg Ser Leu Gln
5 10 15
gag cag gcg gac gcc gct gag gag cgc gcg ggc acc ctg cag cgc gag 332
Glu Gln Ala Asp Ala Ala Glu Glu Arg Ala Gly Thr Leu Gln Arg Glu
20 25 30
ctg gac cac gag agg aag ctg agg gag acc gct gaa gcc gac gta gct 380
Leu Asp His Glu Arg Lys Leu Arg Glu Thr Ala Glu Ala Asp Val Ala
35 40 45 50
tct ctg aac aga cgc atc cag ctg gtt gag gaa gag ttg gat cgt gcc 428
Ser Leu Asn Arg Arg Ile Gln Leu Val Glu Glu Leu Asp Arg Ala
55 60 65
cag gag cgt ctg gca aca gct ttg cag aag ctg gag gaa gct gag aag 476
Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys Leu Glu Ala Glu Lys
70 75 80
gca gca gat gag agt gag aga ggc atg aaa gtc att gag agt cga gcc 524
Ala Ala Asp Glu Ser Glu Arg Gly Met Lys Val Ile Glu Ser Arg Ala
85 90 95
caa aaa gat gaa gaa aaa atg gaa att cag gag atc caa ctg aaa gag 572
Gln Lys Asp Glu Glu Lys Met Glu Ile Gln Glu Ile Gln Leu Lys Glu
100 105 110
gca aag cac att gct gaa gat gcc gac cgc aaa tat gaa gag gtg gcc 620
Ala Lys His Ile Ala Glu Asp Ala Asp Arg Lys Tyr Glu Glu Val Ala
115 120 125 130
cgt aag ctg gtc atc att gag agc gac ctg gaa cgt gca gag gag cgg 668
Arg Lys Leu Val Ile Ile Glu Ser Asp Leu Glu Arg Ala Glu Glu Arg

135	140	145	
gct gag ctc tca gaa ggc aaa tgt gcc gag ctt gaa gaa gaa ttg aaa Ala Glu Leu Ser Glu Gly Lys Cys Ala Glu Leu Glu Glu Leu Lys 150	155	160	716
act gtg acg aac aac ttg aag tca ctg gag gct cag gct gag aag tac Thr Val Thr Asn Asn Leu Lys Ser Leu Glu Ala Gln Ala Glu Lys Tyr 165	170	175	764
tcg cag aag gaa gac aga tat gag gaa gag atc aag gtc ctt tcc gac Ser Gln Lys Glu Asp Arg Tyr Glu Glu Glu Ile Lys Val Leu Ser Asp 180	185	190	812
aag ctg aag gag gct gag act cg ^g gct gag ttt gc ^g gag agg tca gta Lys Leu Lys Glu Ala Glu Thr Arg Ala Glu Phe Ala Glu Arg Ser Val 195	200	205	860
act aaa ttg gag aaa agc att gat gac tta gaa gat caa ctc tac cag Thr Lys Leu Glu Lys Ser Ile Asp Asp Leu Glu Asp Gln Leu Tyr Gln 215	220	225	908
caa ctt gag caa aat cgc cgc ctc act aat gaa cta aag ctg gcc ctg Gln Leu Glu Gln Asn Arg Arg Leu Thr Asn Glu Leu Lys Leu Ala Leu 230	235	240	956
aat gag gat taaaacttaag agtgaaaaaa cttgggctga attctaggcg Asn Glu Asp 245			1005
tggagcccat gtgcagaaaaa tctaagactg tcctaccctt caactaatag agttgaaaac agttgctttc tgcagaaaatg caaatgcaag gaattggctg aaaggctggc cttgcctgct tgtttctcta tat			1065 1125 1138
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<213> Homo sapiens			
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Met Ala Gly Ser Ser Ser Leu Glu Ala Val Arg Arg Lys Ile Arg Ser 1 5 10 15			
Leu Gln Glu Gln Ala Asp Ala Ala Glu Glu Arg Ala Gly Thr Leu Gln 20 25 30			
Arg Glu Leu Asp His Glu Arg Lys Leu Arg Glu Thr Ala Glu Ala Asp 35 40 45			
Val Ala Ser Leu Asn Arg Arg Ile Gln Leu Val Glu Glu Glu Leu Asp 50 55 60			
Arg Ala Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys Leu Glu Glu Ala 65 70 75 80			

Glu Lys Ala Ala Asp Glu Ser Glu Arg Gly Met Lys Val Ile Glu Ser
85 90 95

Arg Ala Gln Lys Asp Glu Glu Lys Met Glu Ile Gln Glu Ile Gln Leu
100 105 110

Lys Glu Ala Lys His Ile Ala Glu Asp Ala Asp Arg Lys Tyr Glu Glu
115 120 125

Val Ala Arg Lys Leu Val Ile Ile Glu Ser Asp Leu Glu Arg Ala Glu
130 135 140

Glu Arg Ala Glu Leu Ser Glu Gly Lys Cys Ala Glu Leu Glu Glu Glu
145 150 155 160

Leu Lys Thr Val Thr Asn Asn Leu Lys Ser Leu Glu Ala Gln Ala Glu
165 170 175

Lys Tyr Ser Gln Lys Glu Asp Arg Tyr Glu Glu Glu Ile Lys Val Leu
180 185 190

Ser Asp Lys Leu Lys Glu Ala Glu Thr Arg Ala Glu Phe Ala Glu Arg
195 200 205

Ser Val Thr Lys Leu Glu Lys Ser Ile Asp Asp Leu Glu Asp Gln Leu
210 215 220

Tyr Gln Gln Leu Glu Gln Asn Arg Arg Leu Thr Asn Glu Leu Lys Leu
225 230 235 240

Ala Leu Asn Glu Asp
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<212> DNA
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tgaagccgac gtagcttctc tgaacagacg catccagctg gttgaggaag agttggatcg 180
tgccccaggag cgtctggcaa cagcttgca gaagctggag gaagctgaga aggcagcaga 240

tgagagttag agaggc atg aaa gtc att gag agt cga gcc caa aaa gat gaa Met Lys Val Ile Glu Ser Arg Ala Gln Lys Asp Glu 1 5 10	292
gaa aaa atg gaa att cag gag atc caa ctg aaa gag gca aag cac att Glu Lys Met Glu Ile Gln Glu Ile Gln Leu Lys Glu Ala Lys His Ile 15 20 25	340
gct gaa gat gcc gac cgc aaa tat gaa gag gtg gcc cgt aag ctg gtc Ala Glu Asp Ala Asp Arg Lys Tyr Glu Glu Val Ala Arg Lys Leu Val 30 35 40	388
atc att gag agc gac ctg gaa cgt gca gag gag cggt gct gag ctc tca Ile Ile Glu Ser Asp Leu Glu Arg Ala Glu Glu Arg Ala Glu Leu Ser 45 50 55 60	436
gaa ggc caa gtc cga cag ctg gaa gaa caa tta aga ata atg gat cag Glu Gly Gln Val Arg Gln Leu Glu Glu Gln Leu Arg Ile Met Asp Gln 65 70 75	484
acc ttg aaa gca tta atg gct gca gag gat aag tac tcg cag aag gaa Thr Leu Lys Ala Leu Met Ala Ala Glu Asp Lys Tyr Ser Gln Lys Glu 80 85 90	532
gac aga tat gag gaa gag atc aag gtc ctt tcc gac aag ctg aag gag Asp Arg Tyr Glu Glu Glu Ile Lys Val Leu Ser Asp Lys Leu Lys Glu 95 100 105	580
gct gag act cgg gct gag ttt gcg gag agg tca gta act aaa ttg gag Ala Glu Thr Arg Ala Glu Phe Ala Glu Arg Ser Val Thr Lys Leu Glu 110 115 120	628
aaa agc att gat gac tta gaa gag aaa gtg gct cat gcc aaa gaa gaa Lys Ser Ile Asp Asp Leu Glu Glu Lys Val Ala His Ala Lys Glu Glu 125 130 135 140	676
aac ctt agt atg cat cag atg ctg gat cag act tta ctg gag tta aac Asn Leu Ser Met His Gln Met Leu Asp Gln Thr Leu Leu Glu Leu Asn 145 150 155	724
aac atg tgaaaacctc cttagctgcg accacattct ttcattttgt ttgttttgt Asn Met	780
tttgtttta aacacctgct taccccttaa atgcaattta tttactttta ccactgtcac	840
agaaaacatcc acaagatacc agcttaggtca ggggggtgggg aaaacacata caaaaaggca	900
agcccatgtc agggcgatcc tggttcaaatt gtgccatttc ccgggttgtat gctgccacac	960
ttttagaga gtttagacaac acagtgtgct tagtcagcgt aggaatcctc actaaagcag	1020
gagaagttcc attcaaagtg ccaatgatag agtcaacagg aaggtaatg ttggaaacac	1080
aatcaggtgt ggattgggtgc tactttgaac aaaaggtccc cctgtggtct tttgttcaac	1140
attgtacaat gtagaactct gtccaaacact aatttatttt gtcttgagtt ttactacaag	1200
atgagactat ggatcccgca tgcctgaatt cactaaagcc aagggtctgt aagccacgct	1260
gctttctga gacttccatt cctttctgat tggcacacgt gcagctcatg acaatctgta	1320
ggataacaat cagtgtggat ttccactctt ttcagtcctt catgttaaag atttagacac	1380

cacataacaac tggttaaagga cgtttcttg agagtttaa ctatatgtaa acattgtata 1440
atgatatgga ataaaatgca cattgttagga catttctaa aaaaaaaaaa aaaaaa 1496

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<212> PRT
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<400> 36

Met Lys Val Ile Glu Ser Arg Ala Gln Lys Asp Glu Glu Lys Met Glu
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Ile Gln Glu Ile Gln Leu Lys Glu Ala Lys His Ile Ala Glu Asp Ala
20 25 30

Asp Arg Lys Tyr Glu Glu Val Ala Arg Lys Leu Val Ile Ile Glu Ser
35 40 45

Asp Leu Glu Arg Ala Glu Glu Arg Ala Glu Leu Ser Glu Gly Gln Val
50 55 60

Arg Gln Leu Glu Glu Gln Leu Arg Ile Met Asp Gln Thr Leu Lys Ala
65 70 75 80

Leu Met Ala Ala Glu Asp Lys Tyr Ser Gln Lys Glu Asp Arg Tyr Glu
85 90 95

Glu Glu Ile Lys Val Leu Ser Asp Lys Leu Lys Glu Ala Glu Thr Arg
100 105 110

Ala Glu Phe Ala Glu Arg Ser Val Thr Lys Leu Glu Lys Ser Ile Asp
115 120 125

Asp Leu Glu Glu Lys Val Ala His Ala Lys Glu Glu Asn Leu Ser Met
130 135 140

His Gln Met Leu Asp Gln Thr Leu Leu Glu Leu Asn Asn Met
145 150 155

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tgacatctgc gggccgggga cctgcatgtg tgtgcgcgcg aaggagcgga aga atg Met 1	176
gca gtg ctc aaa ctc acc gac cag cca cca ttg gtt cag gca atc ttc Ala Val Leu Lys Leu Thr Asp Gln Pro Pro Leu Val Gln Ala Ile Phe 5 10 15	224
agc ggt gat cca gag gag atc cgg atg ctc atc cat aaa act gaa gat Ser Gly Asp Pro Glu Glu Ile Arg Met Leu Ile His Lys Thr Glu Asp 20 25 30	272
gtg aat act ctg gat tct gag aaa cga acc cct ctt cat gtg gcc gca Val Asn Thr Leu Asp Ser Glu Lys Arg Thr Pro Leu His Val Ala Ala 35 40 45	320
ttt ctg gga gat gca gag atc att gaa ctc ctg att ttg tca gga gct Phe Leu Gly Asp Ala Glu Ile Ile Glu Leu Leu Ile Leu Ser Gly Ala 50 55 60 65	368
cgt gta aat gcc aag gac aac atg tgg ctg act cca ctg cac cgg gct Arg Val Asn Ala Lys Asp Asn Met Trp Leu Thr Pro Leu His Arg Ala 70 75 80	416
gtt gct tcc aga agc gaa gca gta cag gtt ttg att aag cac tca Val Ala Ser Arg Ser Glu Glu Ala Val Gln Val Leu Ile Lys His Ser 85 90 95	464
gct gat gtc aat gca agg gac aag aac tgg cag acc cct ctt cat gtg Ala Asp Val Asn Ala Arg Asp Lys Asn Trp Gln Thr Pro Leu His Val 100 105 110	512
gca gca gcc aac aag gct gtc aaa tgt gca gaa gtg atc att ccc ctg Ala Ala Ala Asn Lys Ala Val Lys Cys Ala Glu Val Ile Ile Pro Leu 115 120 125	560
ctg agc agt gtc aat gtc tcc gac cga ggg ggg cgc aca gcc ttg cac Leu Ser Ser Val Asn Val Ser Asp Arg Gly Gly Arg Thr Ala Leu His 130 135 140 145	608
cat gcg gct ctg aac ggc cac gtg gag atg gtc aat tta ctc ttg gcc His Ala Ala Leu Asn Gly His Val Glu Met Val Asn Leu Leu Ala 150 155 160	656
aaa ggg gca aat atc aat gca ttt gac aag aag gac cgg cgt gct ctg Lys Gly Ala Asn Ile Asn Ala Phe Asp Lys Lys Asp Arg Arg Ala Leu 165 170 175	704
cac tgg gca gca tac atg ggc cac ttg gat gtt gta gca ttg ctc att His Trp Ala Ala Tyr Met Gly His Leu Asp Val Val Ala Leu Leu Ile 180 185 190	752
aac cat ggc gca gaa gtg acc tgt aag gat aag aag ggt tat acc cct Asn His Gly Ala Glu Val Thr Cys Lys Asp Lys Lys Gly Tyr Thr Pro 195 200 205	800
ctg cat gct gca gcc tcc aat gga cag att aat gtt gtc aag cat ctc Leu His Ala Ala Ala Ser Asn Gly Gln Ile Asn Val Val Lys His Leu 210 215 220 225	848

ctg aac ctg ggg gtg gag att gat gaa atc aat gtc tat gga aat aca Leu Asn Leu Gly Val Glu Ile Asp Glu Ile Asn Val Tyr Gly Asn Thr 230 235 240	896
gcg ctt cac atc gcc tgc tac aat gga cag gat gct gtg gtt aac gag Ala Leu His Ile Ala Cys Tyr Asn Gly Gln Asp Ala Val Val Asn Glu 245 250 255	944
ttg att gac tac ggt gct aac gtg aac cag cca aac aat aat ggg ttc Leu Ile Asp Tyr Gly Ala Asn Val Asn Gln Pro Asn Asn Asn Gly Phe 260 265 270	992
acc cct ttg cat ttt gct gct gcc tcc act cat ggt gct ttg tgt ctt Thr Pro Leu His Phe Ala Ala Ser Thr His Gly Ala Leu Cys Leu 275 280 285	1040
gaa ttg tta gta aac aac ggg gca gat gtt aac att cag agt aaa gat Glu Leu Leu Val Asn Asn Gly Ala Asp Val Asn Ile Gln Ser Lys Asp 290 295 300 305	1088
ggc aaa agt cca ctg cac atg aca gct gtc cat gga agg ttc aca cgg Gly Lys Ser Pro Leu His Met Thr Ala Val His Gly Arg Phe Thr Arg 310 315 320	1136
tca cag acc ctc att cag aat gga ggt gaa att gac tgt gtg gat aag Ser Gln Thr Leu Ile Gln Asn Gly Gly Glu Ile Asp Cys Val Asp Lys 325 330 335	1184
gac ggc aac act cct ctc cat gtg gct gca aga tac ggt cat gag ctt Asp Gly Asn Thr Pro Leu His Val Ala Ala Arg Tyr Gly His Glu Leu 340 345 350	1232
ttg att aac acc tta ata acc agc gga gct gac aca gcc aag tgt gga Leu Ile Asn Thr Leu Ile Thr Ser Gly Ala Asp Thr Ala Lys Cys Gly 355 360 365	1280
atc cat agc atg ttc cct tta cat tta gct gcc cta aat gct cac tct Ile His Ser Met Phe Pro Leu His Leu Ala Ala Leu Asn Ala His Ser 370 375 380 385	1328
gac tgc tgc aga aag ttg tta tca tcg gga caa aag tat agc ata gta Asp Cys Cys Arg Lys Leu Leu Ser Ser Gly Gln Lys Tyr Ser Ile Val 390 395 400	1376
tcc ttg ttt agt aat gag cac gtg ctg tct gca ggc ttt gaa ata gac Ser Leu Phe Ser Asn Glu His Val Leu Ser Ala Gly Phe Glu Ile Asp 405 410 415	1424
acc cca gat aaa ttt gga aga acg tgc ctt cat gct gct gca gga Thr Pro Asp Lys Phe Gly Arg Thr Cys Leu His Ala Ala Ala Gly 420 425 430	1472
ggt aat gtg gaa tgt ata aaa ctc ttg cag agc agc gga gca gat ttc Gly Asn Val Glu Cys Ile Lys Leu Leu Gln Ser Ser Gly Ala Asp Phe 435 440 445	1520
cat aaa aag gac aag tgt ggg agg acc cct ttg cac tat gca gct gcg His Lys Lys Asp Lys Cys Gly Arg Thr Pro Leu His Tyr Ala Ala Ala 450 455 460 465	1568
aat tgt cat ttc cac tgt att gag aca tta gtg acc aca ggg gcc aac Asn Cys His Phe His Cys Ile Glu Thr Leu Val Thr Thr Gly Ala Asn 470 475 480	1616

gtt aat gaa aca gat gac tgg gga cgc aca gct ttg cat tac gcc gct Val Asn Glu Thr Asp Asp Trp Gly Arg Thr Ala Leu His Tyr Ala Ala 485 490 495	1664
gca tca gac atg gat aga aat aag act atc tta gga aat gcc cat gat Ala Ser Asp Met Asp Arg Asn Lys Thr Ile Leu Gly Asn Ala His Asp 500 505 510	1712
aat tca gaa gaa ctt gaa aga gcc agg gag ctg aag gaa aag gaa gcc Asn Ser Glu Glu Leu Glu Arg Ala Arg Glu Leu Lys Glu Lys Glu Ala 515 520 525	1760
aca cta tgt cta gag ttt ctg ctt caa aat gat gca aat cca tct atc Thr Leu Cys Leu Glu Phe Leu Leu Gln Asn Asp Ala Asn Pro Ser Ile 530 535 540 545	1808
cgg gac aag gaa ggt tac aat agc ata cat tat gct gcc gcc tat ggg Arg Asp Lys Glu Gly Tyr Asn Ser Ile His Tyr Ala Ala Ala Tyr Gly 550 555 560	1856
cac agg cag tgt ctg gaa ttg ctt ttg gaa aga aca aac agt gga ttt His Arg Gln Cys Leu Glu Leu Leu Glu Arg Thr Asn Ser Gly Phe 565 570 575	1904
gaa gaa tca gat tct ggt gct act aag agt cca ctc cac tta gct gcc Glu Glu Ser Asp Ser Gly Ala Thr Lys Ser Pro Leu His Leu Ala Ala 580 585 590	1952
tac aat ggg cac cat caa gcc ttg gaa gtc ctt ctg cag tcg ttg gtg Tyr Asn Gly His His Gln Ala Leu Glu Val Leu Leu Gln Ser Leu Val 595 600 605	2000
gac ctg gac atc agg gat gag aaa ggc cgc act gct ctg gat ctg gct Asp Leu Asp Ile Arg Asp Glu Lys Gly Arg Thr Ala Leu Asp Leu Ala 610 615 620 625	2048
gcc ttt aaa gga cac aca gaa tgt gtg gaa ggc ctt atc aat cag ggc Ala Phe Lys Gly His Thr Glu Cys Val Glu Ala Leu Ile Asn Gln Gly 630 635 640	2096
gca tcc atc ttt gtg aaa gac aat gta acc aaa aga acc cca ctt cat Ala Ser Ile Phe Val Lys Asp Asn Val Thr Lys Arg Thr Pro Leu His 645 650 655	2144
gcc tca gta att aat ggt cac aca ctg tgt tta cgg ctg ttg cta gaa Ala Ser Val Ile Asn Gly His Thr Leu Cys Leu Arg Leu Leu Glu 660 665 670	2192
att gca gac aac ccg gag gcg gtc gat gtg aaa gat gcc aaa gga caa Ile Ala Asp Asn Pro Glu Ala Val Asp Val Lys Asp Ala Lys Gly Gln 675 680 685	2240
aca cca ctg atg ctt gca gta gca tat gga cat att gac gct gtt tca Thr Pro Leu Met Leu Ala Val Ala Tyr Gly His Ile Asp Ala Val Ser 690 695 700 705	2288
ttg tta ctt gaa aag gaa gcc aac gta gac act gtt gac atc cta gga Leu Leu Leu Glu Lys Glu Ala Asn Val Asp Thr Val Asp Ile Leu Gly 710 715 720	2336
tgc aca gct tta cac aga ggg att atg aca gga cac gag gaa tgt gtg Cys Thr Ala Leu His Arg Gly Ile Met Thr Gly His Glu Glu Cys Val 725 730 735	2384

caa atg ctg ctg gaa caa gaa gtg tca att ctc tgt aaa gat tcc aga Gln Met Leu Leu Glu Gln Glu Val Ser Ile Leu Cys Lys Asp Ser Arg 740 745 750	2432
ggg agg acg ccc ttg cac tat gca gct gct cgt ggc cac gcc acg tgg Gly Arg Thr Pro Leu His Tyr Ala Ala Arg Gly His Ala Thr Trp 755 760 765	2480
ctg agc gag ctg ctc caa atg gct ctt tct gag gag gac tgt tgt ttc Leu Ser Glu Leu Leu Gln Met Ala Leu Ser Glu Glu Asp Cys Cys Phe 770 775 780 785	2528
aaa gat aac caa ggc tac acg ccg ctg cac tgg gct tgt tac aat ggt Lys Asp Asn Gln Gly Tyr Thr Pro Leu His Trp Ala Cys Tyr Asn Gly 790 795 800	2576
aat gaa aac tgt ata gag gta ctt ttg gag caa aaa tgt ttt cgc aaa Asn Glu Asn Cys Ile Glu Val Leu Leu Glu Gln Lys Cys Phe Arg Lys 805 810 815	2624
ttt atc ggt aat ccc ttt act cca ctg cac tgt gca ata atc aat gat Phe Ile Gly Asn Pro Phe Thr Pro Leu His Cys Ala Ile Ile Asn Asp 820 825 830	2672
cat ggg aat tgt gca tca ttg ctg ctt ggg gcc ata gat tcc agt atc His Gly Asn Cys Ala Ser Leu Leu Leu Gly Ala Ile Asp Ser Ser Ile 835 840 845	2720
gtc agt tgt aga gat gac aaa ggc agg aca ccc ctt cat gcg gca gca Val Ser Cys Arg Asp Asp Lys Gly Arg Thr Pro Leu His Ala Ala Ala 850 855 860 865	2768
ttt gct gat cat gtg gag tgc ttg cag ctt ctt ctg aga cac agt gct Phe Ala Asp His Val Glu Cys Leu Gln Leu Leu Arg His Ser Ala 870 875 880	2816
cca gtg aac gca gta gat aat tca ggg aaa aca gca ctg atg atg gct Pro Val Asn Ala Val Asp Asn Ser Gly Lys Thr Ala Leu Met Met Ala 885 890 895	2864
gct gag aat ggg cag gca ggc gct gtg gat att ttg gtg aac agt gcc Ala Glu Asn Gly Gln Ala Gly Ala Val Asp Ile Leu Val Asn Ser Ala 900 905 910	2912
cag gct gat ctg act gta aag gat aag gac ttg aat aca ccc tta cat Gln Ala Asp Leu Thr Val Lys Asp Lys Asp Leu Asn Thr Pro Leu His 915 920 925	2960
ttg gct tgt agt aaa ggt cat gaa aaa tgt gcc ttg tta ata ctt gac Leu Ala Cys Ser Lys Gly His Glu Lys Cys Ala Leu Leu Ile Leu Asp 930 935 940 945	3008
aag ata caa gac gag agc ctt att aat gaa aaa aat aat gca ctg cag Lys Ile Gln Asp Glu Ser Leu Ile Asn Glu Lys Asn Asn Ala Leu Gln 950 955 960	3056
aca ccc ctc cac gtc gct gcg cgc aat ggc tta aag gtg gta gtt gag Thr Pro Leu His Val Ala Ala Arg Asn Gly Leu Lys Val Val Val Glu 965 970 975	3104
gag ttg ctg gcc aaa ggg gcc tgt gta ctt gct gta gat gaa aat ggc Glu Leu Leu Ala Lys Gly Ala Cys Val Leu Ala Val Asp Glu Asn Gly 980 985 990	3152

tgt taaccattca agatccaaga acatcggttg gctgaaaaac aggccacctg 3205
Cys

agggaccaat tatgaatcag aatgcacttt atcccagcca cagaacgcaa agggttacac 3265
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ctagagcact ttgaaattct ttcaggataa gtgttatacg aacacaaatg atttcttca 3505
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<210> 38
<211> 994
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<213> Homo sapiens

<400> 38

Met Ala Val Leu Lys Leu Thr Asp Gln Pro Pro Leu Val Gln Ala Ile
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Phe Ser Gly Asp Pro Glu Glu Ile Arg Met Leu Ile His Lys Thr Glu
20 25 30

Asp Val Asn Thr Leu Asp Ser Glu Lys Arg Thr Pro Leu His Val Ala
35 40 45

Ala Phe Leu Gly Asp Ala Glu Ile Ile Glu Leu Leu Ile Leu Ser Gly
50 55 60

Ala Arg Val Asn Ala Lys Asp Asn Met Trp Leu Thr Pro Leu His Arg
65 70 75 80

Ala Val Ala Ser Arg Ser Glu Glu Ala Val Gln Val Leu Ile Lys His
85 90 95

Ser Ala Asp Val Asn Ala Arg Asp Lys Asn Trp Gln Thr Pro Leu His
100 105 110

Val Ala Ala Ala Asn Lys Ala Val Lys Cys Ala Glu Val Ile Ile Pro
115 120 125

Leu Leu Ser Ser Val Asn Val Ser Asp Arg Gly Gly Arg Thr Ala Leu
130 135 140

His His Ala Ala Ile Asn Gly His Val Glu Met Val Asn Leu Leu Leu
145 150 155 160

Ala Lys Gly Ala Asn Ile Asn Ala Phe Asp Lys Lys Asp Arg Arg Ala
165 170 175

Leu His Trp Ala Ala Tyr Met Gly His Leu Asp Val Val Ala Leu Leu
180 185 190

Ile Asn His Gly Ala Glu Val Thr Cys Lys Asp Lys Lys Gly Tyr Thr
195 200 205

Pro Leu His Ala Ala Ser Asn Gly Gln Ile Asn Val Val Lys His
210 215 220

Leu Leu Asn Leu Gly Val Glu Ile Asp Glu Ile Asn Val Tyr Gly Asn
225 230 235 240

Thr Ala Leu His Ile Ala Cys Tyr Asn Gly Gln Asp Ala Val Val Asn
245 250 255

Glu Leu Ile Asp Tyr Gly Ala Asn Val Asn Gln Pro Asn Asn Asn Gly
260 265 270

Phe Thr Pro Leu His Phe Ala Ala Ser Thr His Gly Ala Leu Cys
275 280 285

Leu Glu Leu Leu Val Asn Asn Gly Ala Asp Val Asn Ile Gln Ser Lys
290 295 300

Asp Gly Lys Ser Pro Leu His Met Thr Ala Val His Gly Arg Phe Thr
305 310 315 320

Arg Ser Gln Thr Leu Ile Gln Asn Gly Gly Glu Ile Asp Cys Val Asp
325 330 335

Lys Asp Gly Asn Thr Pro Leu His Val Ala Ala Arg Tyr Gly His Glu
340 345 350

Leu Leu Ile Asn Thr Leu Ile Thr Ser Gly Ala Asp Thr Ala Lys Cys
355 360 365

Gly Ile His Ser Met Phe Pro Leu His Leu Ala Ala Leu Asn Ala His
370 375 380

Ser Asp Cys Cys Arg Lys Leu Leu Ser Ser Gly Gln Lys Tyr Ser Ile
385 390 395 400

Val Ser Leu Phe Ser Asn Glu His Val Leu Ser Ala Gly Phe Glu Ile
405 410 415

Asp Thr Pro Asp Lys Phe Gly Arg Thr Cys Leu His Ala Ala Ala Ala
420 425 430

Gly Gly Asn Val Glu Cys Ile Lys Leu Leu Gln Ser Ser Gly Ala Asp
435 440 445

Phe His Lys Lys Asp Lys Cys Gly Arg Thr Pro Leu His Tyr Ala Ala
450 455 460

Ala Asn Cys His Phe His Cys Ile Glu Thr Leu Val Thr Thr Gly Ala
465 470 475 480

Asn Val Asn Glu Thr Asp Asp Trp Gly Arg Thr Ala Leu His Tyr Ala
485 490 495

Ala Ala Ser Asp Met Asp Arg Asn Lys Thr Ile Leu Gly Asn Ala His
500 505 510

Asp Asn Ser Glu Glu Leu Glu Arg Ala Arg Glu Leu Lys Glu Lys Glu
515 520 525

Ala Thr Leu Cys Leu Glu Phe Leu Leu Gln Asn Asp Ala Asn Pro Ser
530 535 540

Ile Arg Asp Lys Glu Gly Tyr Asn Ser Ile His Tyr Ala Ala Ala Tyr
545 550 555 560

Gly His Arg Gln Cys Leu Glu Leu Leu Glu Arg Thr Asn Ser Gly
565 570 575

Phe Glu Glu Ser Asp Ser Gly Ala Thr Lys Ser Pro Leu His Leu Ala
580 585 590

Ala Tyr Asn Gly His His Gln Ala Leu Glu Val Leu Leu Gln Ser Leu
595 600 605

Val Asp Leu Asp Ile Arg Asp Glu Lys Gly Arg Thr Ala Leu Asp Leu
610 615 620

Ala Ala Phe Lys Gly His Thr Glu Cys Val Glu Ala Leu Ile Asn Gln
625 630 635 640

Gly Ala Ser Ile Phe Val Lys Asp Asn Val Thr Lys Arg Thr Pro Leu
645 650 655

His Ala Ser Val Ile Asn Gly His Thr Leu Cys Leu Arg Leu Leu Leu
660 665 670

Glu Ile Ala Asp Asn Pro Glu Ala Val Asp Val Lys Asp Ala Lys Gly
675 680 685

Gln Thr Pro Leu Met Leu Ala Val Ala Tyr Gly His Ile Asp Ala Val
690 695 700

Ser Leu Leu Leu Glu Lys Glu Ala Asn Val Asp Thr Val Asp Ile Leu
705 710 715 720

Gly Cys Thr Ala Leu His Arg Gly Ile Met Thr Gly His Glu Glu Cys
725 730 735

Val Gln Met Leu Leu Glu Gln Glu Val Ser Ile Leu Cys Lys Asp Ser
740 745 750

Arg Gly Arg Thr Pro Leu His Tyr Ala Ala Ala Arg Gly His Ala Thr
755 760 765

Trp Leu Ser Glu Leu Leu Gln Met Ala Leu Ser Glu Glu Asp Cys Cys
770 775 780

Phe Lys Asp Asn Gln Gly Tyr Thr Pro Leu His Trp Ala Cys Tyr Asn
785 790 795 800

Gly Asn Glu Asn Cys Ile Glu Val Leu Leu Glu Gln Lys Cys Phe Arg
805 810 815

Lys Phe Ile Gly Asn Pro Phe Thr Pro Leu His Cys Ala Ile Ile Asn
820 825 830

Asp His Gly Asn Cys Ala Ser Leu Leu Leu Gly Ala Ile Asp Ser Ser
835 840 845

Ile Val Ser Cys Arg Asp Asp Lys Gly Arg Thr Pro Leu His Ala Ala
850 855 860

Ala Phe Ala Asp His Val Glu Cys Leu Gln Leu Leu Leu Arg His Ser
865 870 875 880

Ala Pro Val Asn Ala Val Asp Asn Ser Gly Lys Thr Ala Leu Met Met
885 890 895

Ala Ala Glu Asn Gly Gln Ala Gly Ala Val Asp Ile Leu Val Asn Ser
900 905 910

Ala Gln Ala Asp Leu Thr Val Lys Asp Lys Asp Leu Asn Thr Pro Leu
915 920 925

His Leu Ala Cys Ser Lys Gly His Glu Lys Cys Ala Leu Leu Ile Leu
930 935 940

Asp Lys Ile Gln Asp Glu Ser Leu Ile Asn Glu Lys Asn Asn Ala Leu
945 950 955 960

Gln Thr Pro Leu His Val Ala Ala Arg Asn Gly Leu Lys Val Val Val
965 970 975

Glu Glu Leu Leu Ala Lys Gly Ala Cys Val Leu Ala Val Asp Glu Asn
980 985 990

Gly Cys

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gatggatgga cctttcatct aagagaaagg aggagacacg ttggcaaatc agcctaagc 180
ctaagattgc ttgtgaagca atcataagga ggaacaaaaa cagacacaaaa aacagaggga 240
aagagtgaaa agacaagaag ggcgc当地 acttca caccgcttca ctaactactc 300
acttaaactg gaagcaaa atg tcc cta aaa ttg cca agg aac tgg gat ttc 351
Met Ser Leu Lys Leu Pro Arg Asn Trp Asp Phe
1 5 10
aac ctg aaa gtg gag gct gcg aaa ata gct cgg tca agg agt gtg atg 399
Asn Leu Lys Val Glu Ala Ala Lys Ile Ala Arg Ser Arg Ser Val Met
15 20 25
act ggc gag cag atg gct gcc ttc cat cca tcg tcc acc ccc aac ccg 447
Thr Gly Glu Gln Met Ala Ala Phe His Pro Ser Ser Thr Pro Asn Pro
30 35 40
ctg gag agg ccc atc aag atg ggc tgg ctg aag aag cag agg tcc atc 495
Leu Glu Arg Pro Ile Lys Met Gly Trp Leu Lys Lys Gln Arg Ser Ile
45 50 55
gtg aag aac tgg cag cag agg tac ttt gtg ctg agg gcg cag cag ctc 543
Val Lys Asn Trp Gln Gln Arg Tyr Phe Val Leu Arg Ala Gln Gln Leu
60 65 70 75

tac tac tac aag gat gaa gag gac acg aag ccc cag ggc tgc atg tat Tyr Tyr Lys Asp Glu Glu Asp Thr Lys Pro Gln Gly Cys Met Tyr 60 85 90	591
cta cca gga tgt aca atc aag gag atc gcc aca aac cca gaa gaa gct Leu Pro Gly Cys Thr Ile Lys Glu Ile Ala Thr Asn Pro Glu Glu Ala 95 100 105	639
ggg aag ttt gtc ttt gaa atc att cca gcc tca tgg gac cag aat cgc Gly Lys Phe Val Phe Glu Ile Ile Pro Ala Ser Trp Asp Gln Asn Arg 110 115 120	687
atg gga cag gac tcc tat gtc ctc atg gcc agc tct cag gcg gag atg Met Gly Gln Asp Ser Tyr Val Leu Met Ala Ser Ser Gln Ala Glu Met 125 130 135	735
gag gag tgg gtt aaa ttc ctc agg aga gtt gct ggc aca ccc tgt gga Glu Glu Trp Val Lys Phe Leu Arg Arg Val Ala Gly Thr Pro Cys Gly 140 145 150 155	783
gtg ttt ggc cag cgc ttg gat gag act gtg gcc tat gaa cag aaa ttc Val Phe Gly Gln Arg Leu Asp Glu Thr Val Ala Tyr Glu Gln Lys Phe 160 165 170	831
ggc ccc cat ctg gtg ccc atc ctg gtg gag aaa tgt gca gag ttc atc Gly Pro His Leu Val Pro Ile Leu Val Glu Lys Cys Ala Glu Phe Ile 175 180 185	879
ctg gag cac ggc cg ^g aat gaa gag ggc atc ttc cgt ctg cct ggg cag Leu Glu His Gly Arg Asn Glu Glu Gly Ile Phe Arg Leu Pro Gly Gln 190 195 200	927
gac aac ctg gtg aag cag ctg aga gac gct ttt gat gct ggg gag cg ^g Asp Asn Leu Val Lys Gln Leu Arg Asp Ala Phe Asp Ala Gly Glu Arg 205 210 215	975
ccc tcc ttt gac aga gac aca gat gtg cac act gtg gct tcc ctg tta Pro Ser Phe Asp Arg Asp Thr Asp Val His Thr Val Ala Ser Leu Leu 220 225 230 235	1023
aag ctc tac ctc cga gac ctc cca gag ccc gtg gtt ccc tgg agc cag Lys Leu Tyr Leu Arg Asp Leu Pro Glu Pro Val Val Pro Trp Ser Gln 240 245 250	1071
tac gaa ggg ttc ctg ctc tgt ggg cag ctc acg aat gcg gat gag gca Tyr Glu Gly Phe Leu Leu Cys Gly Gln Leu Thr Asn Ala Asp Glu Ala 255 260 265	1119
aag gct cag cag gag ttg atg aag cag ctc tcc atc ctt cct cgt gac Lys Ala Gln Gln Glu Leu Met Lys Gln Leu Ser Ile Leu Pro Arg Asp 270 275 280	1167
aac tat agt ctc ctg agc tac atc tgc agg ttc cta cat gaa ata cag Asn Tyr Ser Leu Leu Ser Tyr Ile Cys Arg Phe Leu His Glu Ile Gln 285 290 295	1215
ctg aac tgt gct gtt aac aag atg agt gtg gac aac ctg gct act gtg Leu Asn Cys Ala Val Asn Lys Met Ser Val Asp Asn Leu Ala Thr Val 300 305 310 315	1263
att ggt gtg aat ctc atc agg tcg aag gtc gaa gac cct gcc gtg atc Ile Gly Val Asn Leu Ile Arg Ser Lys Val Glu Asp Pro Ala Val Ile 320 325 330	1311

atg aga ggg act cct cag atc caa aga gtg atg act atg atg atc aga Met Arg Gly Thr Pro Gln Ile Gln Arg Val Met Thr Met Met Ile Arg 335 340 345	1359
gac cat gaa gtc ctc ttc ccc aag tcc aag gat ata ccc ctg tca ccc Asp His Glu Val Leu Phe Pro Lys Ser Lys Asp Ile Pro Leu Ser Pro 350 355 360	1407
cct gcc cag aaa aat gac ccc aag aaa gct cca gtg gcc cga agc tct Pro Ala Gln Lys Asn Asp Pro Lys Lys Ala Pro Val Ala Arg Ser Ser 365 370 375	1455
gta ggc tgg gat gcc act gaa gac ctc cga att tct agg aca gac agc Val Gly Trp Asp Ala Thr Glu Asp Leu Arg Ile Ser Arg Thr Asp Ser 380 385 390 395	1503
ttc agt agc atg aca agc gac tct gat aca acc agc ccc acc gga cag Phe Ser Ser Met Thr Ser Asp Ser Asp Thr Thr Ser Pro Thr Gly Gln 400 405 410	1551
cag ccg agc gat gcg ttt ccg gag gac agc agc aaa gta ccc agg gaa Gln Pro Ser Asp Ala Phe Pro Glu Asp Ser Ser Lys Val Pro Arg Glu 415 420 425	1599
aag cca gga gac tgg aaa atg caa tct cgt aaa agg act caa aca ctc Lys Pro Gly Asp Trp Lys Met Gln Ser Arg Lys Arg Thr Gln Thr Leu 430 435 440	1647
cct aac cgg aaa tgt ttc ttg aca tca gct ttt cag ggt gcc aac agc Pro Asn Arg Lys Cys Phe Leu Thr Ser Ala Phe Gln Gly Ala Asn Ser 445 450 455	1695
agc aaa atg gag atc ttt aaa aat gaa ttc tgg tcg cct tcc tca gag Ser Lys Met Glu Ile Phe Lys Asn Glu Phe Trp Ser Pro Ser Ser Glu 460 465 470 475	1743
gct aag gca ggg gaa ggg cac agg aga acg atg tct caa gac ttg cgc Ala Lys Ala Gly Glu Gly His Arg Arg Thr Met Ser Gln Asp Leu Arg 480 485 490	1791
caa ctt tct gac tcc caa cgg act tcc acc tac gat aac gtc cct tcc Gln Leu Ser Asp Ser Gln Arg Thr Ser Thr Tyr Asp Asn Val Pro Ser 495 500 505	1839
ctg cca ggg tcc cct ggg gag gaa gcc agt gca ctc tct tcc caa gcc Leu Pro Gly Ser Pro Gly Glu Ala Ser Ala Leu Ser Ser Gln Ala 510 515 520	1887
tgt gac tcc aag gga gat act ctt gcc agt cca aac tct gaa act ggg Cys Asp Ser Lys Gly Asp Thr Leu Ala Ser Pro Asn Ser Glu Thr Gly 525 530 535	1935
cct gga aaa aag aac tct gga gaa gag gaa att gat tct ttg cag agg Pro Gly Lys Lys Asn Ser Gly Glu Glu Ile Asp Ser Leu Gln Arg 540 545 550 555	1983
atg gtc caa gag cta cga aag gaa ata gaa aca cag aag caa atg tat Met Val Gln Glu Leu Arg Lys Glu Ile Glu Thr Gln Lys Gln Met Tyr 560 565 570	2031
gag gaa cag att aaa aac ctt gag aag gaa aat tat gac gtt tgg gct Glu Glu Gln Ile Lys Asn Leu Glu Lys Glu Asn Tyr Asp Val Trp Ala 575 580 585	2079

aaa gtg gtg agg ctc aat gaa gaa ctg gag aag gaa aag aag aag tct		2127
Lys Val Val Arg Leu Asn Glu Glu Leu Glu Lys Lys Lys Lys Ser		
590	595	600
gca gcc cta gag atc agc ctc cgc aac atg gag cgc tcc cg ^g gag gat		2175
Ala Ala Leu Glu Ile Ser Leu Arg Asn Met Glu Arg Ser Arg Glu Asp		
605	610	615
gtt gag aag agg aac aag gcc ttg gaa gaa gaa gtc aag gaa ttt gtc		2223
Val Glu Lys Arg Asn Lys Ala Leu Glu Glu Val Lys Glu Phe Val		
620	625	630
aaa tcc atg aag gaa ccc aag acc gag gct taagggtccc aggagtactg		2273
Lys Ser Met Lys Glu Pro Lys Thr Glu Ala		
640	645	
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aaataaaatga atggagttt ^g caggaaggtg agggtgagca gagatgtgtg tggacatctc		2453
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aaagcaaaat tt		2885

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<213> Homo sapiens

<400> 40

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Ala Ala Phe His Pro Ser Ser Thr Pro Asn Pro Leu Glu Arg Pro Ile		
35	40	45

Lys Met Gly Trp Leu Lys Lys Gln Arg Ser Ile Val Lys Asn Trp Gln		
50	55	60

Gln Arg Tyr Phe Val Leu Arg Ala Gln Gln Leu Tyr Tyr Tyr Lys Asp		
65	70	75
80		

Glu Glu Asp Thr Lys Pro Gln Gly Cys Met Tyr Leu Pro Gly Cys Thr
85 90 95

Ile Lys Glu Ile Ala Thr Asn Pro Glu Glu Ala Gly Lys Phe Val Phe
100 105 110

Glu Ile Ile Pro Ala Ser Trp Asp Gln Asn Arg Met Gly Gln Asp Ser
115 120 125

Tyr Val Leu Met Ala Ser Ser Gln Ala Glu Met Glu Glu Trp Val Lys
130 135 140

Phe Leu Arg Arg Val Ala Gly Thr Pro Cys Gly Val Phe Gly Gln Arg
145 150 155 160

Leu Asp Glu Thr Val Ala Tyr Glu Gln Lys Phe Gly Pro His Leu Val
165 170 175

Pro Ile Leu Val Glu Lys Cys Ala Glu Phe Ile Leu Glu His Gly Arg
180 185 190

Asn Glu Glu Gly Ile Phe Arg Leu Pro Gly Gln Asp Asn Leu Val Lys
195 200 205

Gln Leu Arg Asp Ala Phe Asp Ala Gly Glu Arg Pro Ser Phe Asp Arg
210 215 220

Asp Thr Asp Val His Thr Val Ala Ser Leu Leu Lys Leu Tyr Leu Arg
225 230 235 240

Asp Leu Pro Glu Pro Val Val Pro Trp Ser Gln Tyr Glu Gly Phe Leu
245 250 255

Leu Cys Gly Gln Leu Thr Asn Ala Asp Glu Ala Lys Ala Gln Gln Glu
260 265 270

Leu Met Lys Gln Leu Ser Ile Leu Pro Arg Asp Asn Tyr Ser Leu Leu
275 280 285

Ser Tyr Ile Cys Arg Phe Leu His Glu Ile Gln Leu Asn Cys Ala Val
290 295 300

Asn Lys Met Ser Val Asp Asn Leu Ala Thr Val Ile Gly Val Asn Leu
305 310 315 320

Ile Arg Ser Lys Val Glu Asp Pro Ala Val Ile Met Arg Gly Thr Pro
325 330 335

Gln Ile Gln Arg Val Met Thr Met Met Ile Arg Asp His Glu Val Leu
340 345 350

Phe Pro Lys Ser Lys Asp Ile Pro Leu Ser Pro Pro Ala Gln Lys Asn
355 360 365

Asp Pro Lys Lys Ala Pro Val Ala Arg Ser Ser Val Gly Trp Asp Ala
370 375 380

Thr Glu Asp Leu Arg Ile Ser Arg Thr Asp Ser Phe Ser Ser Met Thr
385 390 395 400

Ser Asp Ser Asp Thr Thr Ser Pro Thr Gly Gln Gln Pro Ser Asp Ala
405 410 415

Phe Pro Glu Asp Ser Ser Lys Val Pro Arg Glu Lys Pro Gly Asp Trp
420 425 430

Lys Met Gln Ser Arg Lys Arg Thr Gln Thr Leu Pro Asn Arg Lys Cys
435 440 445

Phe Leu Thr Ser Ala Phe Gln Gly Ala Asn Ser Ser Lys Met Glu Ile
450 455 460

Phe Lys Asn Glu Phe Trp Ser Pro Ser Ser Glu Ala Lys Ala Gly Glu
465 470 475 480

Gly His Arg Arg Thr Met Ser Gln Asp Leu Arg Gln Leu Ser Asp Ser
485 490 495

Gln Arg Thr Ser Thr Tyr Asp Asn Val Pro Ser Leu Pro Gly Ser Pro
500 505 510

Gly Glu Glu Ala Ser Ala Leu Ser Ser Gln Ala Cys Asp Ser Lys Gly
515 520 525

Asp Thr Leu Ala Ser Pro Asn Ser Glu Thr Gly Pro Gly Lys Lys Asn
530 535 540

Ser Gly Glu Glu Glu Ile Asp Ser Leu Gln Arg Met Val Gln Glu Leu
545 550 555 560

Arg Lys Glu Ile Glu Thr Gln Lys Gln Met Tyr Glu Glu Gln Ile Lys
565 570 575

Asn Leu Glu Lys Glu Asn Tyr Asp Val Trp Ala Lys Val Val Arg Leu
580 585 590

Asn Glu Glu Leu Glu Lys Glu Lys Lys Ser Ala Ala Leu Glu Ile
595 600 605

Ser Leu Arg Asn Met Glu Arg Ser Arg Glu Asp Val Glu Lys Arg Asn
610 615 620

Lys Ala Leu Glu Glu Glu Val Lys Glu Phe Val Lys Ser Met Lys Glu
625 630 635 640

Pro Lys Thr Glu Ala
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ccctgc atg cat cag acc tac agc aga cat tgc agg cct gaa gaa agc 108
Met His Gln Thr Tyr Ser Arg His Cys Arg Pro Glu Glu Ser
1 5 10

acc ttt tct gct gcc atg aca acc atg caa gga atg gaa cag gcc atg 156
Thr Phe Ser Ala Ala Met Thr Thr Met Gln Gly Met Glu Gln Ala Met
15 20 25 30

cca ggg gct ggc cct ggt gtg ccc cag ctg gga aac atg gct gtc ata 204
Pro Gly Ala Gly Pro Gly Val Pro Gln Leu Gly Asn Met Ala Val Ile
35 40 45

cat tca cat ctg tgg aaa gga ttg caa gag aag ttc ttg aag gga gaa 252
His Ser His Leu Trp Lys Gly Leu Gln Glu Lys Phe Leu Lys Gly Glu
50 55 60

ccc aaa gtc ctt ggg gtt gtg cag att ctg act gcc ctg atg agc ctt 300
Pro Lys Val Leu Gly Val Val Gln Ile Leu Thr Ala Leu Met Ser Leu
65 70 75

agc atg gga ata aca atg atg tgt atg gca tct aat act tat gga agt 348
Ser Met Gly Ile Thr Met Met Cys Met Ala Ser Asn Thr Tyr Gly Ser
80 85 90

aac cct att tcc gtg tat atc ggg tac aca att tgg ggg tca gta atg 396
Asn Pro Ile Ser Val Tyr Ile Gly Tyr Thr Ile Trp Gly Ser Val Met
95 100 105 110

ttt att att tca gga tcc ttg tca att gca gca gga att aga act aca 444
Phe Ile Ile Ser Gly Ser Leu Ser Ile Ala Ala Gly Ile Arg Thr Thr
115 120 125

aaa ggc ctg ggt ctg gat ggc atg gtg ctc ctc tta agt gtg ctg gaa Lys Gly Leu Gly Leu Asp Gly Met Val Leu Leu Ser Val Leu Glu	492
130 135 140	
tcc tgc att gct gtt tcc ctc tct gcc ttt gga tgt aaa gtg ctc tgt Phe Cys Ile Ala Val Ser Leu Ser Ala Phe Gly Cys Lys Val Leu Cys	540
143 150 155	
tgt acc cct ggt ggg gtt gtg tta att ctg cca tca cat tct cac atg Cys Thr Pro Gly Gly Val Val Leu Ile Leu Pro Ser His Ser His Met	588
160 165 170	
gca gaa aca gca tct ccc aca cca ctt aat gag gtt tgaggccacc Ala Glu Thr Ala Ser Pro Thr Pro Leu Asn Glu Val	634
175 180 185	
aaaaagatcaa cagacaaatg ctccagaaat ctatgctgac tgtgacacaa gagcctcaca	694
tgagaaaatta ccagtatcca acttcgatac tgatagactt gttgatatta ttattatatg	754
taatccaatt atgaactgtg tgtgtataga gagataataa attcaaaatt atgttctcat	814
ttttttccct ggaactcaat aactcatttc actggctctt tatcgagagt actagaagtt	874
aaattaataa ataatgcatt taatgaggca acagcacttg aaagttttc attcatcata	934
agaactttat ataaaggcat tacattggca aataaggttt ggaagcagaa gagcaaaaaa	994
aagatattgt taaaatgagg cctccatgca aaacacatac ttccctccca tttatthaac	1054
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tcccttctcc caccttctac tgggcataat tatacttaa tcatatatgg aaatgtcaa	1354
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agc	1417

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<211> 186
<212> PRT
<213> Homo sapiens

<400> 42

Met His Gln Thr Tyr Ser Arg His Cys Arg Pro Glu Glu Ser Thr Phe	
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Ser Ala Ala Met Thr Thr Met Gln Gly Met Glu Gln Ala Met Pro Gly	
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Ala Gly Pro Gly Val Pro Gln Leu Gly Asn Met Ala Val Ile His Ser	
35 40 45	

His Leu Trp Lys Gly Leu Gln Glu Lys Phe Leu Lys Gly Glu Pro Lys
50 55 60

Val Leu Gly Val Val Gln Ile Leu Thr Ala Leu Met Ser Leu Ser Met
65 70 75 80

Gly Ile Thr Met Met Cys Met Ala Ser Asn Thr Tyr Gly Ser Asn Pro
85 90 95

Ile Ser Val Tyr Ile Gly Tyr Thr Ile Trp Gly Ser Val Met Phe Ile
100 105 110

Ile Ser Gly Ser Leu Ser Ile Ala Ala Gly Ile Arg Thr Thr Lys Gly
115 120 125

Leu Gly Leu Asp Gly Met Val Leu Leu Leu Ser Val Leu Glu Phe Cys
130 135 140

Ile Ala Val Ser Leu Ser Ala Phe Gly Cys Lys Val Leu Cys Cys Thr
145 150 155 160

Pro Gly Gly Val Val Leu Ile Leu Pro Ser His Ser His Met Ala Glu
165 170 175

Thr Ala Ser Pro Thr Pro Leu Asn Glu Val
180 185

<210> 43
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cgccccata cccacagaca gcatcgacca gaattatttt aaaaaaaaaagc agtgatccaa 180
gcaattgaat tggaaagcact ctggggaaac ctgctgtta ttgtggaaat catcttcgat 240
cttggatttg aaagtaaagc tgaaaggaa tttacaaaca agaaaaaaaaa gaagtttgg 300
atcgattca caggatctgg gcttggaa atg cct cag cgt gta agc gga 352
Met Pro Gln Pro Ser Val Ser Gly
1 5

atg gat ccg cct ttc ggg gat gcc ttt cga agc cac acc ttt tcg gaa 400
Met Asp Pro Pro Phe Gly Asp Ala Phe Arg Ser His Thr Phe Ser Glu

10	15	20	
caa act ctg atg agc aca gat ctc tta gca aac agt tcg gat cca gat Gln Thr Leu Met Ser Thr Asp Leu Leu Ala Asn Ser Ser Asp Pro Asp 25 30 35 40			448
ttc atg tat gaa ctg gat aga gag atg aac tac caa cag aat cct aga Phe Met Tyr Glu Leu Asp Arg Glu Met Asn Tyr Gln Gln Asn Pro Arg 45 50 55			496
gac aac ttt ctt tct ttg gag gac tgc aaa gac att gaa aat ctg gag Asp Asn Phe Leu Ser Leu Glu Asp Cys Lys Asp Ile Glu Asn Leu Glu 60 65 70			544
tct ttc aca gat gtc ctg gat aat gag ggt gct tta acc tca aac tgg Ser Phe Thr Asp Val Leu Asp Asn Glu Gly Ala Leu Thr Ser Asn Trp 75 80 85			592
gaa cag tgg gat aca tac tgt gaa gac cta acg aaa tat acc aaa cta Glu Gln Trp Asp Thr Tyr Cys Glu Asp Leu Thr Lys Tyr Thr Lys Leu 90 95 100			640
acc agc tgt gac atc tgg gga aca aaa gaa gtg gat tac ttg ggt ctt Thr Ser Cys Asp Ile Trp Gly Thr Lys Glu Val Asp Tyr Leu Gly Leu 105 110 115 120			688
gat gac ttt tct agt cct tac caa gat gaa gag gtt ata agt aaa act Asp Asp Phe Ser Ser Pro Tyr Gln Asp Glu Glu Val Ile Ser Lys Thr 125 130 135			736
cca act tta gct caa ctt aat agt gag gac tca cag tct gtt tct gat Pro Thr Leu Ala Gln Leu Asn Ser Glu Asp Ser Gln Ser Val Ser Asp 140 145 150			784
tcc ctt tat tac ccc gat tca ctt ttc agt gtc aaa caa aat ccc tta Ser Leu Tyr Tyr Pro Asp Ser Leu Phe Ser Val Lys Gln Asn Pro Leu 155 160 165			832
ccc tct tca ttc cct ggt aaa aag atc aca agc aga gca gct gct cct Pro Ser Ser Phe Pro Gly Lys Lys Ile Thr Ser Arg Ala Ala Ala Pro 170 175 180			880
gtg tgt tct tct aag act ctg cag gct gag gtc cct ttg tca gac tgt Val Cys Ser Ser Lys Thr Leu Gln Ala Glu Val Pro Leu Ser Asp Cys 185 190 195 200			928
gtc caa aaa gca agt aaa ccc cct tca agc aca caa atc atg gtg aag Val Gln Lys Ala Ser Lys Pro Pro Ser Ser Thr Gln Ile Met Val Lys 205 210 215			976
acc aac atg tat cat aat gaa aag gtg aac ttt cat gtt gaa tgt aaa Thr Asn Met Tyr His Asn Glu Lys Val Asn Phe His Val Glu Cys Lys 220 225 230			1024
gac tat gta aaa aag gca aag gta aag atc aac cca gtg caa cag agc Asp Tyr Val Lys Lys Ala Lys Val Lys Ile Asn Pro Val Gln Gln Ser 235 240 245			1072
cgg ccc ttg ttg agc cag att cac aca gat gca gca aag gag aac acc Arg Pro Leu Leu Ser Gln Ile His Thr Asp Ala Ala Lys Glu Asn Thr 250 255 260			1120
tgc tac tgt ggt gca gtg gca aag aga caa gag aaa aaa ggg atg gag Cys Tyr Cys Gly Ala Val Ala Lys Arg Gln Glu Lys Lys Gly Met Glu			1168

. 26	270	275	280	
cct ctt caa ggt cat gcc act ccc gct ttg cct ttt aaa gaa acc cag Pro Leu Gln Gly His Ala Thr Pro Ala Leu Pro Phe Lys Glu Thr Gln	285	290	295	1216
gaa cta tta cta agt ccc ctg ccc cag gaa ggt cct ggg tca ctt gca Glu Leu Leu Leu Ser Pro Leu Pro Gln Glu Gly Pro Gly Ser Leu Ala	300	305	310	1264
gca gga gag agc agc agt ctt tct gcc agt aca tca gtc tca gat tca Ala Gly Glu Ser Ser Leu Ser Ala Ser Thr Ser Val Ser Asp Ser	315	320	325	1312
tcc cag aaa aaa gaa gag cac aat tat tct ctt ttt gtc tcc gac aac Ser Gln Lys Lys Glu Glu His Asn Tyr Ser Leu Phe Val Ser Asp Asn	330	335	340	1360
ttg ggt gaa cag cca act aaa tgc agt cct gaa gaa gat gag gag gac Leu Gly Glu Gln Pro Thr Lys Cys Ser Pro Glu Glu Asp Glu Glu Asp	345	350	355	1408
gag gag gat gtt gat gat gag gac cat gat gaa gga ttc ggc agt gag Glu Glu Asp Val Asp Asp Glu Asp His Asp Glu Gly Phe Gly Ser Glu	365	370	375	1456
cat gaa ctg tct gaa aat gag gag gaa gaa gag gaa gat tat His Glu Leu Ser Glu Asn Glu Glu Glu Glu Glu Glu Asp Tyr	380	385	390	1504
gaa gat gac aag gat gat att agt gat act ttc tct gaa cca ggc Glu Asp Asp Lys Asp Asp Ile Ser Asp Thr Phe Ser Glu Pro Gly	395	400	405	1552
tat gaa aat gat tct gta gaa gac ctg aag gag gtg act tca ata tct Tyr Glu Asn Asp Ser Val Glu Asp Leu Lys Glu Val Thr Ser Ile Ser	410	415	420	1600
tca cgg aag aga ggt aaa aga aga tac ttc tgg gag tat agt gaa caa Ser Arg Lys Arg Gly Lys Arg Arg Tyr Phe Trp Glu Tyr Ser Glu Gln	425	430	435	1648
ctt aca cca tca cag caa gag agg atg ctg aga cca tct gag tgg aac Leu Thr Pro Ser Gln Gln Glu Arg Met Leu Arg Pro Ser Glu Trp Asn	445	450	455	1696
cga gat act ttg cca agt aat atg tat cag aaa aat ggc tta cat cat Arg Asp Thr Leu Pro Ser Asn Met Tyr Gln Lys Asn Gly Leu His His	460	465	470	1744
gga aaa tat gca gta aag aag tca cgg aga act gat gta gaa gac ctg Gly Lys Tyr Ala Val Lys Lys Ser Arg Arg Thr Asp Val Glu Asp Leu	475	480	485	1792
act cca aat cct aaa aaa ctc ctc cag ata ggc aat gaa ctt cgg aaa Thr Pro Asn Pro Lys Lys Leu Leu Gln Ile Gly Asn Glu Leu Arg Lys	490	495	500	1840
ctg aat aag gtg att agt gac ctg act cca gtc agt gag ctt ccc tta Leu Asn Lys Val Ile Ser Asp Leu Thr Pro Val Ser Glu Leu Pro Leu	505	510	515	1888
aca gcc cga cca agg tca agg aag gaa aaa aat aag ctg gct ttc aga Thr Ala Arg Pro Arg Ser Arg Lys Glu Lys Asn Lys Leu Ala Phe Arg				1936

	525	530	535	
gct tgt cgg tta aag aag aaa gcc cag tat gaa gct aat aaa gtg aaa Aia Cys Arg Leu Lys Lys Ala Gln Tyr Glu Ala Asn Lys Val Lys	540	545	550	1984
tta tgg ggc ctc aac aca gaa tat gat aat tta ttg ttt gta atc aac Leu Trp Gly Leu Asn Thr Glu Tyr Asp Asn Leu Leu Phe Val Ile Asn	555	560	565	2032
tcc atc aag caa gag att gta aac cgg gta cag aat cca aga gat gag Ser Ile Lys Gln Glu Ile Val Asn Arg Val Gln Asn Pro Arg Asp Glu	570	575	580	2080
aga gga ccc aac atg ggg cag aag ctt gaa atc ctc att aaa gat act Arg Gly Pro Asn Met Gly Gln Lys Leu Glu Ile Leu Ile Lys Asp Thr	585	590	595	2128
ctc ggt cta cca gtt gct ggg caa acc tca gaa ttt gtt aac caa gtg Leu Gly Leu Pro Val Ala Gly Gln Thr Ser Glu Phe Val Asn Gln Val	605	610	615	2176
tta gag aag act gca gaa ggg aat ccc act gga ggc ctt gta gga tta Leu Glu Lys Thr Ala Glu Gly Asn Pro Thr Gly Gly Leu Val Gly Leu	620	625	630	2224
agg ata cca aca tca aag gtg taatcagcct cattggacca ctggtcagaa Arg Ile Pro Thr Ser Lys Val	635			2275
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gcattatgt aacatttaca attaggttac attgtttaa gaactaagta gcataagtga				2395
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gcgatacttg atctatataa aaacctggca gtaaaatgtt gaggtaaagt taaatccct 5035
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caggggactc tggcattt aaaaaccgtct agaaatggtt gtactttat gccagtaata 5155
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tgatttaaaa aaaaaaaaaaaa aaaa 5479

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<212> PRT
<213> Homo sapiens

<400> 44

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20 25 30

Leu Ala Asn Ser Ser Asp Pro Asp Phe Met Tyr Glu Leu Asp Arg Glu
35 40 45

Met Asn Tyr Gln Gln Asn Pro Arg Asp Asn Phe Leu Ser Leu Glu Asp
50 55 60

Cys Lys Asp Ile Glu Asn Leu Glu Ser Phe Thr Asp Val Leu Asp Asn
65 70 75 80

Glu Gly Ala Leu Thr Ser Asn Trp Glu Gln Trp Asp Thr Tyr Cys Glu
85 90 95

Asp Leu Thr Lys Tyr Thr Lys Leu Thr Ser Cys Asp Ile Trp Gly Thr
100 105 110

Lys Glu Val Asp Tyr Leu Gly Leu Asp Asp Phe Ser Ser Pro Tyr Gln
115 120 125

Asp Glu Glu Val Ile Ser Lys Thr Pro Thr Leu Ala Gln Leu Asn Ser
130 135 140

Glu Asp Ser Gln Ser Val Ser Asp Ser Leu Tyr Tyr Pro Asp Ser Leu
145 150 155 160

Phe Ser Val Lys Gln Asn Pro Leu Pro Ser Ser Phe Pro Gly Lys Lys
165 170 175

Ile Thr Ser Arg Ala Ala Ala Pro Val Cys Ser Ser Lys Thr Leu Gln
180 185 190

Ala Glu Val Pro Leu Ser Asp Cys Val Gln Lys Ala Ser Lys Pro Pro
195 200 205

Ser Ser Thr Gln Ile Met Val Lys Thr Asn Met Tyr His Asn Glu Lys
210 215 220

Val Asn Phe His Val Glu Cys Lys Asp Tyr Val Lys Lys Ala Lys Val
225 230 235 240

Lys Ile Asn Pro Val Gln Gln Ser Arg Pro Leu Leu Ser Gln Ile His
245 250 255

Thr Asp Ala Ala Lys Glu Asn Thr Cys Tyr Cys Gly Ala Val Ala Lys
260 265 270

Arg Gln Glu Lys Lys Gly Met Glu Pro Leu Gln Gly His Ala Thr Pro
275 280 285

Ala Leu Pro Phe Lys Glu Thr Gln Glu Leu Leu Leu Ser Pro Leu Pro
290 295 300

Gln Glu Gly Pro Gly Ser Leu Ala Ala Gly Glu Ser Ser Ser Leu Ser
305 310 315 320

Ala Ser Thr Ser Val Ser Asp Ser Ser Gln Lys Lys Glu Glu His Asn
325 330 335

Tyr Ser Leu Phe Val Ser Asp Asn Leu Gly Glu Gln Pro Thr Lys Cys
340 345 350

Ser Pro Glu Glu Asp Glu Glu Asp Glu Glu Asp Val Asp Asp Glu Asp
355 360 365

His Asp Glu Gly Phe Gly Ser Glu His Glu Leu Ser Glu Asn Glu Glu
370 375 380

Glu Glu Glu Glu Glu Asp Tyr Glu Asp Asp Lys Asp Asp Asp Ile
385 390 395 400

Ser Asp Thr Phe Ser Glu Pro Gly Tyr Glu Asn Asp Ser Val Glu Asp
405 410 415

Leu Lys Glu Val Thr Ser Ile Ser Ser Arg Lys Arg Gly Lys Arg Arg
420 425 430

Tyr Phe Trp Glu Tyr Ser Glu Gln Leu Thr Pro Ser Gln Gln Glu Arg
435 440 445

Met Leu Arg Pro Ser Glu Trp Asn Arg Asp Thr Leu Pro Ser Asn Met
450 455 460

Tyr Gln Lys Asn Gly Leu His His Gly Lys Tyr Ala Val Lys Lys Ser
465 470 475 480

Arg Arg Thr Asp Val Glu Asp Leu Thr Pro Asn Pro Lys Lys Leu Leu
485 490 495

Gln Ile Gly Asn Glu Leu Arg Lys Leu Asn Lys Val Ile Ser Asp Leu
500 505 510

Thr Pro Val Ser Glu Leu Pro Leu Thr Ala Arg Pro Arg Ser Arg Lys
515 520 525

Glu Lys Asn Lys Leu Ala Phe Arg Ala Cys Arg Leu Lys Lys Lys Ala
530 535 540

Gln Tyr Glu Ala Asn Lys Val Lys Leu Trp Gly Leu Asn Thr Glu Tyr
545 550 555 560

Asp Asn Leu Leu Phe Val Ile Asn Ser Ile Lys Gln Glu Ile Val Asn
565 570 575

Arg Val Gln Asn Pro Arg Asp Glu Arg Gly Pro Asn Met Gly Gln Lys
580 585 590

Leu Glu Ile Leu Ile Lys Asp Thr Leu Gly Leu Pro Val Ala Gly Gln
595 600 605

Thr Ser Glu Phe Val Asn Gln Val Leu Glu Lys Thr Ala Glu Gly Asn
610 615 620

Pro Thr Gly Gly Leu Val Gly Leu Arg Ile Pro Thr Ser Lys Val
625 630 635

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<213> Homo sapiens

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<222> (481)..(2403)
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cccggtgcgag cctgctggag gaggaagaga aaggcagaga gagtcgggtt acaagatggc	180
ggatctgttag tagttaccgc ggcggcggga gagcaagcga gccctggggg gcaaagagac	240
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cctcagtggtctt cttgtcacccc cttctcgccg ctgaaccttt ggagccatgg tgaattcgaa	360
cctctccgaa gcccggccgc cggccaccgc cactactgcc tttaccgtct cctaagagtgc	420
aggagcgcgg acgaggttaag cgaggaggcg gcggctagag cggtgagac agcagccacc	480
atg tcg gat acg cgg cgg cga gtg aag gtc tat acc ctg aac gaa gac	528
Met Ser Asp Thr Arg Arg Val Lys Val Tyr Thr Leu Asn Glu Asp	
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cgg caa tgg gac gac cga ggc acc ggg cac gtc tcc tcc act tac gtg	576
Arg Gln Trp Asp Asp Arg Gly Thr Gly His Val Ser Ser Thr Tyr Val	
20 25 30	
gag gag ctc aag ggg atg tcg ctg gtt cgg gca gag tcc gac gga	624
Glu Glu Leu Lys Gly Met Ser Leu Leu Val Arg Ala Glu Ser Asp Gly	
35 40 45	
tca cta ctc ttg gaa tca aag ata aat cca aat act gca tat cag aaa	672
Ser Leu Leu Leu Glu Ser Lys Ile Asn Pro Asn Thr Ala Tyr Gln Lys	
50 55 60	
caa cag gat aca tta att gtt tgg tca gaa gca gag aac tat gat ttg	720
Gln Gln Asp Thr Leu Ile Val Trp Ser Glu Ala Glu Asn Tyr Asp Leu	
65 70 75 80	
gct ctg agt ttt cag gag aaa gct ggc tgt gat gag atc tgg gaa aaa	768
Ala Leu Ser Phe Gln Glu Lys Ala Gly Cys Asp Glu Ile Trp Glu Lys	
85 90 95	
att tgt cag gaa gat gag aag ttt ttg tct gaa gtt ttt gca caa tta	816
Ile Cys Gln Glu Asp Glu Lys Phe Leu Ser Glu Val Phe Ala Gln Leu	
100 105 110	
aca gat gag gct aca gat gat gat aaa cgg cgt gaa ttg gtt aat ttt	864
Thr Asp Glu Ala Thr Asp Asp Lys Arg Arg Glu Leu Val Asn Phe	
115 120 125	
ttc aag gag ttt tgt gca ttt tct cag aca tta caa cct caa aac agg	912
Phe Lys Glu Phe Cys Ala Phe Ser Gln Thr Leu Gln Pro Gln Asn Arg	
130 135 140	
gat gca ttt ttc aaa aca ttg gca aaa ttg gga att ctt cct gct ctt	960
Asp Ala Phe Phe Lys Thr Leu Ala Lys Leu Gly Ile Leu Pro Ala Leu	
145 150 155 160	
gaa awt gta atg ggc atg gat gat ttg caa gtc aga tca gct gct aca	1008
Glu Xaa Val Met Gly Met Asp Asp Leu Gln Val Arg Ser Ala Ala Thr	
165 170 175	
gat ata ttt tct tat cta gta gaa ttt agt cca tct atg gtc cga gag	1056
Asp Ile Phe Ser Tyr Leu Val Glu Phe Ser Pro Ser Met Val Arg Glu	
180 185 190	
ttt gta atg caa gaa gct cag cag agt gat gac gat att ctt ctt att	1104
Phe Val Met Gln Glu Ala Gln Gln Ser Asp Asp Ile Leu Leu Ile	

195	200	205	
aat gtg gta att gaa caa atg atc tgt gat act gat cct gag cta gga Asn Val Val Ile Glu Gln Met Ile Cys Asp Thr Asp Pro Glu Leu Gly 210	215	220	1152
ggc gct gtt cag tta atg gga ctt ctt cgt act cta att gat cca gag Gly Ala Val Gln Leu Met Gly Leu Leu Arg Thr Leu Ile Asp Pro Glu 225	230	235	1200
aac atg ctg gct aca act aat aaa acc gaa aaa agt gaa ttt cta aat Asn Met Leu Ala Thr Thr Asn Lys Thr Glu Lys Ser Glu Phe Leu Asn 245	250	255	1248
ttt ttc tac aac cat tgt atg cat gtt ctc aca gca cca ctt ttg acc Phe Phe Tyr Asn His Cys Met His Val Leu Thr Ala Pro Leu Leu Thr 260	265	270	1296
aat act tca gaa gac aaa tgt gaa aag gat ttt ttt tta aaa cat tac Asn Thr Ser Glu Asp Lys Cys Glu Lys Asp Phe Phe Leu Lys His Tyr 275	280	285	1344
aga tat agt tgg agt ttc ata tgt acc cct tca cat tcc cat tcc cat Arg Tyr Ser Trp Ser Phe Ile Cys Thr Pro Ser His Ser His Ser His 290	295	300	1392
tct acc ccc tct tcc atc tct caa gat aat ata gtt gga tca aac Ser Thr Pro Ser Ser Ile Ser Gln Asp Asn Ile Val Gly Ser Asn 305	310	315	1440
aaa aac aac aca att tgt ccc gat aat tat caa aca gca cag cta ctt Lys Asn Asn Thr Ile Cys Pro Asp Asn Tyr Gln Thr Ala Gln Leu Leu 325	330	335	1488
gcc tta att tta gag tta ctc aca ttt tgt gtg gaa cat cac aca tat Ala Leu Ile Leu Glu Leu Leu Thr Phe Cys Val Glu His His Thr Tyr 340	345	350	1536
cac ata aaa aac tat att atg aac aag gac ttg cta aga aga gtc ttg His Ile Lys Asn Tyr Ile Met Asn Lys Asp Leu Leu Arg Arg Val Leu 355	360	365	1584
gtc ttg atg aat tca aag cac act ttt ctg gcc ttg tgt gcc ctt cgc Val Leu Met Asn Ser Lys His Thr Phe Leu Ala Leu Cys Ala Leu Arg 370	375	380	1632
ttt atg agg cgg ata att gga ctt aaa gat gaa ttt tat aat cgt tac Phe Met Arg Arg Ile Ile Gly Leu Lys Asp Glu Phe Tyr Asn Arg Tyr 385	390	395	1680
atc acc aag gga aat ctt ttt gag cca gtt ata aat gca ctt ctg gat Ile Thr Lys Gly Asn Leu Phe Glu Pro Val Ile Asn Ala Leu Leu Asp 405	410	415	1728
aat gga act cgg tat aat ctg ttg aat tca gct gtt att gag ttg ttt Asn Gly Thr Arg Tyr Asn Leu Leu Asn Ser Ala Val Ile Glu Leu Phe 420	425	430	1776
gaa ttt ata aga gtg gaa gat atc aag tct ctt act gcc cat ata gtt Glu Phe Ile Arg Val Glu Asp Ile Lys Ser Leu Thr Ala His Ile Val 435	440	445	1824
gaa aac ttt tat aaa gca ctt gaa tcg att gaa tat gtt cag aca ttc Glu Asn Phe Tyr Lys Ala Leu Glu Ser Ile Glu Tyr Val Gln Thr Phe			1872

450	455	460	
aaa gga ttg aag act aaa tat gag caa gaa aaa gac aga caa aat cag Lys Gly Leu Lys Thr Lys Tyr Glu Gln Glu Lys Asp Arg Gln Asn Gln 465 470 475 480			1920
aaa ctg aac agt gta cca tct ata ttg cgt agt aac aga ttt cgc aga Lys Leu Asn Ser Val Pro Ser Ile Leu Arg Ser Asn Arg Phe Arg Arg 485 490 495			1968
gat gca aaa gcc ttg gaa gag gat gaa gaa atg tgg ttt aat gaa gat Asp Ala Lys Ala Leu Glu Asp Glu Glu Met Trp Phe Asn Glu Asp 500 505 510			2016
gaa gaa gag gaa gga aaa gca gtt gtg gca cca gtg gaa aaa cct aag Glu Glu Glu Gly Lys Ala Val Val Ala Pro Val Glu Lys Pro Lys 515 520 525			2064
cca gaa gat gat ttt cca gat aat tat gaa aag ttt atg gag act aaa Pro Glu Asp Asp Phe Pro Asp Asn Tyr Glu Lys Phe Met Glu Thr Lys 530 535 540			2112
aaa gca aaa gaa agt gaa gac aag gaa aac ctt ccc aaa agg aca tct Lys Ala Lys Glu Ser Glu Asp Lys Glu Asn Leu Pro Lys Arg Thr Ser 545 550 555 560			2160
cct ggt ggc ttc aaa ttt act ttc tcc cac tct gcc agt gct gct aat Pro Gly Gly Phe Lys Phe Thr Phe Ser His Ser Ala Ser Ala Ala Asn 565 570 575			2208
gga aca aac agt aaa tct gta gtg gct cag ata cca cca gca act tct Gly Thr Asn Ser Lys Ser Val Val Ala Gln Ile Pro Pro Ala Thr Ser 580 585 590			2256
aat gga tcc tct tcc aaa acc aca aac ttg cct acg tca gta aca gcc Asn Gly Ser Ser Ser Lys Thr Thr Asn Leu Pro Thr Ser Val Thr Ala 595 600 605			2304
acc aag gga agt ttg gtt ggc tta gtg gat tat cca gat gat gaa gag Thr Lys Gly Ser Leu Val Gly Leu Val Asp Tyr Pro Asp Asp Glu Glu 610 615 620			2352
gaa gat gaa gaa gaa tcg tcc ccc agg aaa aga cct cgt ctt ggc Glu Asp Glu Glu Glu Ser Ser Pro Arg Lys Arg Pro Arg Leu Gly 625 630 635 640			2400
tca taaaatattt attagggac cctcaacatg tggcttaca atgctgcaac Ser			2453
tgttcagtga gctgaaaatc tgaatcagaa agctttctca attgaactta taaaatatac aaggagtagc aaaagacagt atatcagcta agagagtttta gttctaataa aaatcaggct tcccaggaac ttgattgctt gctagtaatt aaggggtttgc ctttttaggc tgtcaaaaca aacattagta accagaacct gggagacagc ttctcagcaa ggaaaagtca caggtttggg gacgggttag gggaggggaa aaggttгата taataatgca gggttgctcc tcgggggtgtc gatctagaaa caatttaca gaacttcagt tgtaaactca ataacattac ttgtataatg gtgctggcca tggttgtttaatcagt gcctttttt aaaagaaatt tttatggaaa			2513 2573 2633 2693 2753 2813 2873

acacattcaa ctatcattaa aaaaatgaag ttaagctgtt gggaccattt ctttaagatt	2933
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<210> 46
<211> 641
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<222> (162)..(162)
<223> The 'Xaa' at location 162 stands for Asn, or Ile.

<400> 46

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Arg Gln Trp Asp Asp Arg Gly Thr Gly His Val Ser Ser Thr Tyr Val		
20	25	30

Glu Glu Leu Lys Gly Met Ser Leu Leu Val Arg Ala Glu Ser Asp Gly		
35	40	45

Ser Leu Leu Leu Glu Ser Lys Ile Asn Pro Asn Thr Ala Tyr Gln Lys		
50	55	60

Gln Gln Asp Thr Leu Ile Val Trp Ser Glu Ala Glu Asn Tyr Asp Leu
65 70 75 80

Ala Leu Ser Phe Gln Glu Lys Ala Gly Cys Asp Glu Ile Trp Glu Lys
85 90 95

Ile Cys Gln Glu Asp Glu Lys Phe Leu Ser Glu Val Phe Ala Gln Leu
100 105 110

Thr Asp Glu Ala Thr Asp Asp Asp Lys Arg Arg Glu Leu Val Asn Phe
115 120 125

Phe Lys Glu Phe Cys Ala Phe Ser Gln Thr Leu Gln Pro Gln Asn Arg
130 135 140

Asp Ala Phe Phe Lys Thr Leu Ala Lys Leu Gly Ile Leu Pro Ala Leu
145 150 155 160

Glu Xaa Val Met Gly Met Asp Asp Leu Gln Val Arg Ser Ala Ala Thr
165 170 175

Asp Ile Phe Ser Tyr Leu Val Glu Phe Ser Pro Ser Met Val Arg Glu
180 185 190

Phe Val Met Gln Glu Ala Gln Gln Ser Asp Asp Asp Ile Leu Leu Ile
195 200 205

Asn Val Val Ile Glu Gln Met Ile Cys Asp Thr Asp Pro Glu Leu Gly
210 215 220

Gly Ala Val Gln Leu Met Gly Leu Leu Arg Thr Leu Ile Asp Pro Glu
225 230 235 240

Asn Met Leu Ala Thr Thr Asn Lys Thr Glu Lys Ser Glu Phe Leu Asn
245 250 255

Phe Phe Tyr Asn His Cys Met His Val Leu Thr Ala Pro Leu Leu Thr
260 265 270

Asn Thr Ser Glu Asp Lys Cys Glu Lys Asp Phe Phe Leu Lys His Tyr
275 280 285

Arg Tyr Ser Trp Ser Phe Ile Cys Thr Pro Ser His Ser His Ser His
290 295 300

Ser Thr Pro Ser Ser Ser Ile Ser Gln Asp Asn Ile Val Gly Ser Asn
305 310 315 320

Lys Asn Asn Thr Ile Cys Pro Asp Asn Tyr Gln Thr Ala Gln Leu Leu
325 330 335

Ala Leu Ile Leu Glu Leu Leu Thr Phe Cys Val Glu His His Thr Tyr
340 345 350

His Ile Lys Asn Tyr Ile Met Asn Lys Asp Leu Leu Arg Arg Val Leu
355 360 365

Val Leu Met Asn Ser Lys His Thr Phe Leu Ala Leu Cys Ala Leu Arg
370 375 380

Phe Met Arg Arg Ile Ile Gly Leu Lys Asp Glu Phe Tyr Asn Arg Tyr
385 390 395 400

Ile Thr Lys Gly Asn Leu Phe Glu Pro Val Ile Asn Ala Leu Leu Asp
405 410 415

Asn Gly Thr Arg Tyr Asn Leu Leu Asn Ser Ala Val Ile Glu Leu Phe
420 425 430

Glu Phe Ile Arg Val Glu Asp Ile Lys Ser Leu Thr Ala His Ile Val
435 440 445

Glu Asn Phe Tyr Lys Ala Leu Glu Ser Ile Glu Tyr Val Gln Thr Phe
450 455 460

Lys Gly Leu Lys Thr Lys Tyr Glu Gln Glu Lys Asp Arg Gln Asn Gln
465 470 475 480

Lys Leu Asn Ser Val Pro Ser Ile Leu Arg Ser Asn Arg Phe Arg Arg
485 490 495

Asp Ala Lys Ala Leu Glu Glu Asp Glu Glu Met Trp Phe Asn Glu Asp
500 505 510

Glu Glu Glu Gly Lys Ala Val Val Ala Pro Val Glu Lys Pro Lys
515 520 525

Pro Glu Asp Asp Phe Pro Asp Asn Tyr Glu Lys Phe Met Glu Thr Lys
530 535 540

Lys Ala Lys Glu Ser Glu Asp Lys Glu Asn Leu Pro Lys Arg Thr Ser
545 550 555 560

Pro Gly Gly Phe Lys Phe Thr Phe Ser His Ser Ala Ser Ala Ala Asn
565 570 575

Gly Thr Asn Ser Lys Ser Val Val Ala Gln Ile Pro Pro Ala Thr Ser
580 585 590

Asn Gly Ser Ser Ser Lys Thr Thr Asn Leu Pro Thr Ser Val Thr Ala
595 600 605

Thr Lys Gly Ser Leu Val Gly Leu Val Asp Tyr Pro Asp Asp Glu Glu
610 615 620

Glu Asp Glu Glu Glu Ser Ser Pro Arg Lys Arg Pro Arg Leu Gly
625 630 635 640

Ser

<210> 47
<211> 4378
<212> DNA
<213> Homo sapiens

<220>
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<222> (393)..(2843)
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<400> 47
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ggctgaacct ttggagccat ggtgaattcg ggcctctccg aagccgcccgc cgccgccacc 300
gccactactg cctttaccgt ctcctaagag tgaggagcgc ggacgaggta agcgaggagg 360
cggcggctag agcgggtggag acagcagcca cc atg tcg gat acg cgg cgg cga 413
Met Ser Asp Thr Arg Arg Arg
1 5

gtg aag gtc tat acc ctg aac gaa gac cgg caa tgg gac gac cga ggc 461
Val Lys Val Tyr Thr Leu Asn Glu Asp Arg Gln Trp Asp Asp Arg Gly
10 15 20

acc ggg cac gtc tcc tcc act tac gtg gag gag ctc aag ggg atg tcg 509
Thr Gly His Val Ser Ser Thr Tyr Val Glu Glu Leu Lys Gly Met Ser
25 30 35

ctg ctg gtt cgg gca gag tcc gac gga tca cta ctc ttg gaa tca aag 557
Leu Leu Val Arg Ala Glu Ser Asp Gly Ser Leu Leu Leu Glu Ser Lys
40 45 50 55

ata aat cca aat act gca tat cag aaa caa cag gat aca tta att gtt 605
Ile Asn Pro Asn Thr Ala Tyr Gln Lys Gln Gln Asp Thr Leu Ile Val
60 65 70

tgg tca gaa gca gag aac tat gat ttg gct ctg agt ttt cag gag aaa Trp Ser Glu Ala Glu Asn Tyr Asp Leu Ala Leu Ser Phe Gln Glu Lys	75	80	85	653
gct ggc tgt gat gag atc tgg gaa aaa att tgt cag gtt caa ggt aaa Ala Gly Cys Asp Glu Ile Trp Glu Lys Ile Cys Gln Val Gln Gly Lys	90	95	100	701
gac cca tca gtg gaa gtc aca cag gac ctc att gat gaa tct gaa gaa Asp Pro Ser Val Glu Val Thr Gln Asp Leu Ile Asp Glu Ser Glu Glu	105	110	115	749
gaa cga ttt gaa gaa atg cct gaa act agt cat ctg att gac ctg ccc Glu Arg Phe Glu Glu Met Pro Glu Thr Ser His Leu Ile Asp Leu Pro	120	125	130	797
aca tgt gaa ctc aat aaa ctt gaa gag att gct gac tta gtt acc tca Thr Cys Glu Leu Asn Lys Leu Glu Glu Ile Ala Asp Leu Val Thr Ser	140	145	150	845
gtg ctc tcc tca cct atc cgt agg gaa aag ctg gct ctc gcc ttg gaa Val Leu Ser Ser Pro Ile Arg Arg Glu Lys Leu Ala Leu Ala Leu Glu	155	160	165	893
aat gaa ggc tat att aaa aaa cta ttg cag ctg ttc caa gct tgc gag Asn Glu Gly Tyr Ile Lys Lys Leu Leu Gln Leu Phe Gln Ala Cys Glu	170	175	180	941
aac cta gaa aac act gaa ggc tta cac cat ttg tat gaa att att aga Asn Leu Glu Asn Thr Glu Gly Leu His His Leu Tyr Glu Ile Ile Arg	185	190	195	989
gga atc tta ttc cta aat aag gca act ctt ttt gag gta atg ttt tct Gly Ile Leu Phe Leu Asn Lys Ala Thr Leu Phe Glu Val Met Phe Ser	200	205	210	1037
gat gag tgt atc atg gat gtc gtg gga tgc ctt gaa tat gac cct gct Asp Glu Cys Ile Met Asp Val Val Gly Cys Leu Glu Tyr Asp Pro Ala	220	225	230	1085
ttg gct cag cca aaa aga cat aga gaa ttc ttg acc aaa act gca aag Leu Ala Gln Pro Lys Arg His Arg Glu Phe Leu Thr Lys Thr Ala Lys	235	240	245	1133
ttc aag gaa gtt ata cca ata aca gac tct gaa cta agg caa aaa ata Phe Lys Glu Val Ile Pro Ile Thr Asp Ser Glu Leu Arg Gln Lys Ile	250	255	260	1181
cat cag act tac agg gta cag tac att cag gac atc att ttg ccc aca His Gln Thr Tyr Arg Val Gln Tyr Ile Gln Asp Ile Ile Leu Pro Thr	265	270	275	1229
cca tct gtt ttt gaa gag aat ttt ctt tct act ctt acg tct ttt att Pro Ser Val Phe Glu Glu Asn Phe Leu Ser Thr Leu Thr Ser Phe Ile	280	285	290	1277
ttc ttc aac aaa gtt gag ata gtc agc atg ttg cag gaa gat gag aag Phe Phe Asn Lys Val Glu Ile Val Ser Met Leu Gln Glu Asp Glu Lys	300	305	310	1325
ttt ttg tct gaa gtt ttt gca caa tta aca gat gag gct aca gat gat Phe Leu Ser Glu Val Phe Ala Gln Leu Thr Asp Glu Ala Thr Asp Asp	315	320	325	1373

gat aua cgg cgt gaa ttg gtt aat ttt ttc aag gag ttt tgt gca ttt Asp Lys Arg Arg Glu Leu Val Asn Phe Phe Lys Glu Phe Cys Ala Phe 330 335 340	1421
tct cag aca tta caa cct caa aac agg gat gca ttt ttc aaa aca ttg Ser Gln Thr Leu Gln Pro Gln Asn Arg Asp Ala Phe Phe Lys Thr Leu 345 350 355	1469
gca aaa ttg gga att ctt cct gct ctt gaa att gta atg ggc atg gat Ala Lys Leu Gly Ile Leu Pro Ala Leu Glu Ile Val Met Gly Met Asp 360 365 370 375	1517
gat ttg caa gtc aga tca gct gct aca gat ata ttt tct tat cta gta Asp Leu Gln Val Arg Ser Ala Ala Thr Asp Ile Phe Ser Tyr Leu Val 380 385 390	1565
gaa ttt agt cca tct atg gtc cga gag ttt gta atg caa gaa gct cag Glu Phe Ser Pro Ser Met Val Arg Glu Phe Val Met Gln Glu Ala Gln 395 400 405	1613
cag agt gat gac gat att ctt ctt att aat gtg gta att gaa caa atg Gln Ser Asp Asp Asp Ile Leu Leu Ile Asn Val Val Ile Glu Gln Met 410 415 420	1661
atc tgt gat act gat cct gag cta gga ggc gct gtt cag tta atg gga Ile Cys Asp Thr Asp Pro Glu Leu Gly Gly Ala Val Gln Leu Met Gly 425 430 435	1709
ctt ctt cgt act cta att gat cca gag aac atg ctg gct aca act aat Leu Leu Arg Thr Leu Ile Asp Pro Glu Asn Met Leu Ala Thr Thr Asn 440 445 450 455	1757
aaa acc gaa aaa agt gaa ttt cta aat ttt ttc tac aac cat tgt atg Lys Thr Glu Lys Ser Glu Phe Leu Asn Phe Phe Tyr Asn His Cys Met 460 465 470	1805
cat gtt ctc aca gca cca ctt ttg acc aat act tca gaa gac aaa tgt His Val Leu Thr Ala Pro Leu Leu Thr Asn Thr Ser Glu Asp Lys Cys 475 480 485	1853
gaa aag gat aat ata gtt gga tca aac aaa aac aac aca att tgt ccc Glu Lys Asp Asn Ile Val Gly Ser Asn Lys Asn Asn Thr Ile Cys Pro 490 495 500	1901
gat aat tat caa aca gca cag cta ctt gcc tta att tta gag tta ctc Asp Asn Tyr Gln Thr Ala Gln Leu Leu Ala Leu Ile Leu Glu Leu Leu 505 510 515	1949
aca ttt tgt gtg gaa cat cac aca tat cac ata aaa aac tat att atg Thr Phe Cys Val Glu His His Thr Tyr His Ile Lys Asn Tyr Ile Met 520 525 530 535	1997
aac aag gac ttg cta aga aga gtc ttg gtc ttg atg aat tca aag cac Asn Lys Asp Leu Leu Arg Arg Val Leu Val Leu Met Asn Ser Lys His 540 545 550	2045
act ttt ctg gcc ttg tgt gcc ctt cgc ttt atg agg cgg ata att gga Thr Phe Leu Ala Leu Cys Ala Leu Arg Phe Met Arg Arg Ile Ile Gly 555 560 565	2093
ctt aaa gat gaa ttt tat aat cgt tac atc acc aag gga aat ctt ttt Leu Lys Asp Glu Phe Tyr Asn Arg Tyr Ile Thr Lys Gly Asn Leu Phe 575 580	2141

gag cca gtt ata aat gca ctt ctg gat aat gga act cg ^g tat aat ctg Glu Pro Val Ile Asn Ala Leu Leu Asp Asn Gly Thr Arg Tyr Asn Leu 585 590 595	2189
ttg aat tca gct gtt att gag ttg ttt ata aga gtg gaa gat Leu Asn Ser Ala Val Ile Glu Leu Phe Glu Phe Ile Arg Val Glu Asp 600 605 610 615	2237
atc aag tct ctt act gcc cat ata gtt gaa aac ttt tat aaa gca ctt Ile Lys Ser Leu Thr Ala His Ile Val Glu Asn Phe Tyr Lys Ala Leu 620 625 630	2285
gaa tcg att gaa tat gtt cag aca ttc aaa gga ttg aag act aaa tat Glu Ser Ile Glu Tyr Val Gln Thr Phe Lys Gly Leu Lys Thr Lys Tyr 635 640 645	2333
gag caa gaa aaa gac aga caa aat cag aaa ctg aac agt gta cca tct Glu Gin Glu Lys Asp Arg Gln Asn Gln Lys Leu Asn Ser Val Pro Ser 650 655 660	2381
ata ttg cgt agt aac aga ttt cgc aga gat gca aaa gcc ttg gaa gag Ile Leu Arg Ser Asn Arg Phe Arg Arg Asp Ala Lys Ala Leu Glu Glu 665 670 675	2429
gat gaa gaa atg tgg ttt aat gaa gat gaa gaa gag gaa gga aaa gca Asp Glu Glu Met Trp Phe Asn Glu Asp Glu Glu Glu Gly Lys Ala 680 685 690 695	2477
gtt gtg gca cca gtg gaa aaa cct aag cca gaa gat gat ttt cca gat Val Val Ala Pro Val Glu Lys Pro Lys Pro Glu Asp Asp Phe Pro Asp 700 705 710	2525
aat tat gaa aag ttt atg gag act aaa aaa gca aaa gaa agt gaa gac Asn Tyr Glu Lys Phe Met Glu Thr Lys Lys Ala Lys Glu Ser Glu Asp 715 720 725	2573
aag gaa aac ctt ccc aaa agg aca tct cct ggt ggc ttc aaa ttt act Lys Glu Asn Leu Pro Lys Arg Thr Ser Pro Gly Gly Phe Lys Phe Thr 730 735 740	2621
ttc tcc cac tct gcc agt gct gct aat gga aca aac agt aaa tct gta Phe Ser His Ser Ala Ser Ala Asn Gly Thr Asn Ser Lys Ser Val 745 750 755	2669
gtg gct cag ata cca cca gca act tct aat gga tcc tct tcc aaa acc Val Ala Gln Ile Pro Pro Ala Thr Ser Asn Gly Ser Ser Ser Lys Thr 760 765 770 775	2717
aca aac ttg cct acg tca gta aca gcc acc aag gga agt ttg gtt ggc Thr Asn Leu Pro Thr Ser Val Thr Ala Thr Lys Gly Ser Leu Val Gly 780 785 790	2765
tta gtg gat tat cca gat gat gaa gag gaa gat gaa gaa gaa gaa tcg Leu Val Asp Tyr Pro Asp Asp Glu Glu Asp Glu Glu Glu Glu Ser 795 800 805	2813
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cctcaacatg tggctttaca atgctgcaac tgttcagtga gctgaaaatc tgaatcagaa	2923
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gcctctttt aaaagaaaatt tttatggaaa acacattcaa ctatcattaa aaaaatgaag	3343
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agggaaagtac accccgtatt cagcacatgt tgagtttct acaccaggaa ttttcaatat	3463
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ttaattttaa ttttggctat tgTTTggaaa agatgagctg tctgtgtaga tatgaagtat	4243
agTTTTTcc ataaaacaga tgTTTatttt gtatTTaaaa ataccactgt acttgcTTta	4303
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 <212> PRT
 <213> Homo sapiens

<400> 48

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20	25	30

Glu Glu Leu Lys Gly Met Ser Leu Leu Val Arg Ala Glu Ser Asp Gly
35 40 45

Ser Leu Leu Leu Glu Ser Lys Ile Asn Pro Asn Thr Ala Tyr Gln Lys
53 55 60

Gln Gln Asp Thr Leu Ile Val Trp Ser Glu Ala Glu Asn Tyr Asp Leu
65 70 75 80

Ala Leu Ser Phe Gln Glu Lys Ala Gly Cys Asp Glu Ile Trp Glu Lys
85 90 95

Ile Cys Gln Val Gln Gly Lys Asp Pro Ser Val Glu Val Thr Gln Asp
100 105 110

Leu Ile Asp Glu Ser Glu Glu Arg Phe Glu Glu Met Pro Glu Thr
115 120 125

Ser His Leu Ile Asp Leu Pro Thr Cys Glu Leu Asn Lys Leu Glu Glu
130 135 140

Ile Ala Asp Leu Val Thr Ser Val Leu Ser Ser Pro Ile Arg Arg Glu
145 150 155 160

Lys Leu Ala Leu Ala Leu Glu Asn Glu Gly Tyr Ile Lys Lys Leu Leu
165 170 175

Gln Leu Phe Gln Ala Cys Glu Asn Leu Glu Asn Thr Glu Gly Leu His
180 185 190

His Leu Tyr Glu Ile Ile Arg Gly Ile Leu Phe Leu Asn Lys Ala Thr
195 200 205

Leu Phe Glu Val Met Phe Ser Asp Glu Cys Ile Met Asp Val Val Gly
210 215 220

Cys Leu Glu Tyr Asp Pro Ala Leu Ala Gln Pro Lys Arg His Arg Glu
225 230 235 240

Phe Leu Thr Lys Thr Ala Lys Phe Lys Glu Val Ile Pro Ile Thr Asp
245 250 255

Ser Glu Leu Arg Gln Lys Ile His Gln Thr Tyr Arg Val Gln Tyr Ile
260 265 270

Gln Asp Ile Ile Leu Pro Thr Pro Ser Val Phe Glu Glu Asn Phe Leu
275 280 285

Ser Thr Leu Thr Ser Phe Ile Phe Phe Asn Lys Val Glu Ile Val Ser
290 295 300

Met Leu Gln Glu Asp Glu Lys Phe Leu Ser Glu Val Phe Ala Gln Leu
305 310 315 320

Thr Asp Glu Ala Thr Asp Asp Asp Lys Arg Arg Glu Leu Val Asn Phe
325 330 335

Phe Lys Glu Phe Cys Ala Phe Ser Gln Thr Leu Gln Pro Gln Asn Arg
340 345 350

Asp Ala Phe Phe Lys Thr Leu Ala Lys Leu Gly Ile Leu Pro Ala Leu
355 360 365

Glu Ile Val Met Gly Met Asp Asp Leu Gln Val Arg Ser Ala Ala Thr
370 375 380

Asp Ile Phe Ser Tyr Leu Val Glu Phe Ser Pro Ser Met Val Arg Glu
385 390 395 400

Phe Val Met Gln Glu Ala Gln Gln Ser Asp Asp Asp Ile Leu Leu Ile
405 410 415

Asn Val Val Ile Glu Gln Met Ile Cys Asp Thr Asp Pro Glu Leu Gly
420 425 430

Gly Ala Val Gln Leu Met Gly Leu Leu Arg Thr Leu Ile Asp Pro Glu
435 440 445

Asn Met Leu Ala Thr Thr Asn Lys Thr Glu Lys Ser Glu Phe Leu Asn
450 455 460

Phe Phe Tyr Asn His Cys Met His Val Leu Thr Ala Pro Leu Leu Thr
465 470 475 480

Asn Thr Ser Glu Asp Lys Cys Glu Lys Asp Asn Ile Val Gly Ser Asn
485 490 495

Lys Asn Asn Thr Ile Cys Pro Asp Asn Tyr Gln Thr Ala Gln Leu Leu
500 505 510

Ala Leu Ile Leu Glu Leu Leu Thr Phe Cys Val Glu His His Thr Tyr
515 520 525

His Ile Lys Asn Tyr Ile Met Asn Lys Asp Leu Leu Arg Arg Val Leu
530 535 540

Val Leu Met Asn Ser Lys His Thr Phe Leu Ala Leu Cys Ala Leu Arg
545 550 555 560

Phe Met Arg Arg Ile Ile Gly Leu Lys Asp Glu Phe Tyr Asn Arg Tyr
565 570 575

Ile Thr Lys Gly Asn Leu Phe Glu Pro Val Ile Asn Ala Leu Leu Asp
580 585 590

Asn Gly Thr Arg Tyr Asn Leu Leu Asn Ser Ala Val Ile Glu Leu Phe
595 600 605

Glu Phe Ile Arg Val Glu Asp Ile Lys Ser Leu Thr Ala His Ile Val
610 615 620

Glu Asn Phe Tyr Lys Ala Leu Glu Ser Ile Glu Tyr Val Gln Thr Phe
625 630 635 640

Lys Gly Leu Lys Thr Lys Tyr Glu Gln Glu Lys Asp Arg Gln Asn Gln
645 650 655

Lys Leu Asn Ser Val Pro Ser Ile Leu Arg Ser Asn Arg Phe Arg Arg
660 665 670

Asp Ala Lys Ala Leu Glu Glu Asp Glu Glu Met Trp Phe Asn Glu Asp
675 680 685

Glu Glu Glu Gly Lys Ala Val Val Ala Pro Val Glu Lys Pro Lys
690 695 700

Pro Glu Asp Asp Phe Pro Asp Asn Tyr Glu Lys Phe Met Glu Thr Lys
705 710 715 720

Lys Ala Lys Glu Ser Glu Asp Lys Glu Asn Leu Pro Lys Arg Thr Ser
725 730 735

Pro Gly Gly Phe Lys Phe Thr Phe Ser His Ser Ala Ser Ala Asn
740 745 750

Gly Thr Asn Ser Lys Ser Val Val Ala Gln Ile Pro Pro Ala Thr Ser
755 760 765

Asn Gly Ser Ser Ser Lys Thr Thr Asn Leu Pro Thr Ser Val Thr Ala
770 775 780

Thr Lys Gly Ser Leu Val Gly Leu Val Asp Tyr Pro Asp Asp Glu Glu
785 790 795 800

Glu Asp Glu Glu Glu Ser Ser Pro Arg Lys Arg Pro Arg Leu Gly
805 810 815

Ser

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Met Gln Arg Glu Glu Lys Gln Leu
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gag gca tca tta gat gca ctg ctg agt caa gtg gct gat ctg aag aac 101
Glu Ala Ser Leu Asp Ala Leu Leu Ser Gln Val Ala Asp Leu Lys Asn
10 15 20

tct ctg ggg agt ttc att tgc aag ttg gag aac gag tat ggc cgg ctg 149
Ser Leu Gly Ser Phe Ile Cys Lys Leu Glu Asn Glu Tyr Gly Arg Leu
25 30 35 40

acc tgg cca tct gtc ctg gac agc ttt gcc ttg ctt tct gga cag ctg 197
Thr Trp Pro Ser Val Leu Asp Ser Phe Ala Leu Leu Ser Gly Gln Leu
45 50 55

aac act ctg aac aag gtc ttg aag cat gaa aaa aca ccg ctg ttc cgt 245
Asn Thr Leu Asn Lys Val Leu Lys His Glu Lys Thr Pro Leu Phe Arg
60 65 70

aac cag gtc atc att cct ctg gtg ttg tct cca gac cga gat gaa gat 293
Asn Gln Val Ile Ile Pro Leu Val Leu Ser Pro Asp Arg Asp Glu Asp
75 80 85

ctc atg cgg cag act gaa gga cgg gtg cct gtt ttc agc cat gag gta 341
Leu Met Arg Gln Thr Glu Gly Arg Val Pro Val Phe Ser His Glu Val
90 95 100

gtc cct gac cat ctg aga acc aag cct gac cct gaa gtg gaa gaa cag 389
Val Pro Asp His Leu Arg Thr Lys Pro Asp Pro Glu Val Glu Glu Gln
105 110 115 120

gag aag caa ctg acg aca gat gct gcc cgc att ggt gca gat gca gcc 437
Glu Lys Gln Leu Thr Thr Asp Ala Ala Arg Ile Gly Ala Asp Ala Ala
125 130 135

cag aag cag atc cag agc ttg aat aaa atg tgt tca aac ctt ctg gag 485
Gln Lys Gln Ile Gln Ser Leu Asn Lys Met Cys Ser Asn Leu Leu Glu
140 145 150

aaa atc agc aaa gag gag cga gaa tca gag agt gga ggt ctc cgg ccg 533
Lys Ile Ser Lys Glu Glu Arg Glu Ser Glu Ser Gly Gly Leu Arg Pro
155 160 165

aac aag cag acc ttt aac cct aca gac act aat gcc ttg gtg gca gct Asn Lys Gln Thr Phe Asn Pro Thr Asp Thr Asn Ala Leu Val Ala Ala	581
170 175 180	
gtt gcc ttt ggg aaa gga cta tct aat tgg aga cct tca ggc agc agt Val Ala Phe Gly Lys Gly Leu Ser Asn Trp Arg Pro Ser Gly Ser Ser	629
185 190 195 200	
ggt cct ggc cag gca ggc cag cca gga gct ggg acg atc ctt gca gga Gly Pro Gly Gln Ala Gly Gln Pro Gly Ala Gly Thr Ile Leu Ala Gly	677
205 210 215	
acc tca gga tta cag cag gtg cag atg gca gga gct cca agc cag cag Thr Ser Gly Leu Gln Gln Val Gln Met Ala Gly Ala Pro Ser Gln Gln	725
220 225 230	
cag cca atg ctc agt ggg gta caa atg gct cag gca ggt caa cca ggg Gln Pro Met Leu Ser Gly Val Gln Met Ala Gln Ala Gly Gln Pro Gly	773
235 240 245	
aaa atg cca agt gga ata aaa acc aac atc aag tcg gct tcc atg cat Lys Met Pro Ser Gly Ile Lys Thr Asn Ile Lys Ser Ala Ser Met His	821
250 255 260	
ccc tac cag cgg tgagtgtggc tggcaacctc gactccctgg tgctctttgc Pro Tyr Gln Arg	873
265	
agagttggc agtgaardaattt ccttttgctc aaggctcacc tagatggta caataaaaag	933
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a	1174

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<400> 50

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20 25 30	

Leu Glu Asn Glu Tyr Gly Arg Leu Thr Trp Pro Ser Val Leu Asp Ser	
35 40 45	

Phe Ala Leu Leu Ser Gly Gln Leu Asn Thr Leu Asn Lys Val Leu Lys	
50 55 60	

His Glu Lys Thr Pro Leu Phe Arg Asn Gln Val Ile Ile Pro Leu Val
65 70 75 80

Leu Ser Pro Asp Arg Asp Glu Asp Leu Met Arg Gln Thr Glu Gly Arg
85 90 95

Val Pro Val Phe Ser His Glu Val Val Pro Asp His Leu Arg Thr Lys
100 105 110

Pro Asp Pro Glu Val Glu Glu Gln Glu Lys Gln Leu Thr Thr Asp Ala
115 120 125

Ala Arg Ile Gly Ala Asp Ala Ala Gln Lys Gln Ile Gln Ser Leu Asn
130 135 140

Lys Met Cys Ser Asn Leu Leu Glu Lys Ile Ser Lys Glu Glu Arg Glu
145 150 155 160

Ser Glu Ser Gly Gly Leu Arg Pro Asn Lys Gln Thr Phe Asn Pro Thr
165 170 175

Asp Thr Asn Ala Leu Val Ala Ala Val Ala Phe Gly Lys Gly Leu Ser
180 185 190

Asn Trp Arg Pro Ser Gly Ser Ser Gly Pro Gly Gln Ala Gly Gln Pro
195 200 205

Gly Ala Gly Thr Ile Leu Ala Gly Thr Ser Gly Leu Gln Gln Val Gln
210 215 220

Met Ala Gly Ala Pro Ser Gln Gln Gln Pro Met Leu Ser Gly Val Gln
225 230 235 240

Met Ala Gln Ala Gly Gln Pro Gly Lys Met Pro Ser Gly Ile Lys Thr
245 250 255

Asn Ile Lys Ser Ala Ser Met His Pro Tyr Gln Arg
260 265

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 gccgcgcagcc ctttcctcct ttcccgagg tgccactgc tgtgcttgcg gccgggtggg 180
 cgcggccgcg ctgcggtcgc ggtcgccgct ggtcctcccg ccgagcccg gcgcggggca 240
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 ctgctgcgtg cccgcgcgc ccctcaaccg cctccgg atg cgc ttc tcg gtt agc 535
 Met Arg Phe Ser Val Ser
 1 5
 ctg gca agg aag ata aag aca ttt gca acc aag atg gta atc act act agt 583
 Leu Ala Arg Lys Ile Lys Thr Phe Ala Thr Lys Met Val Ile Thr Ser
 10 15 20
 gaa aat gat gaa gac aga gga ggt caa gaa aaa gaa agt aaa gag gag 631
 Glu Asn Asp Glu Asp Arg Gly Gly Gln Glu Lys Glu Ser Lys Glu Glu
 25 30 35
 agt gtc ttg gca atg ctg ggg att atc ggg acc att ctg aac ctg att 679
 Ser Val Leu Ala Met Leu Gly Ile Ile Gly Thr Ile Leu Asn Leu Ile
 40 45 50
 gtg atc ata ttt gtc tac ata tac acc acc ctg tgaatggccc agagcgtcct 732
 Val Ile Ile Phe Val Tyr Ile Tyr Thr Thr Leu
 55 60 65
 cagaggcctc agaatggcca aagacggaag tcctgcgtgt cggcgcatca ctgaccagac 792
 cctgcgagaa caagcaggct tgacccgcac ataccaccca atcaaatgca ccttcaaact 852
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Pro Ala Leu Pro Pro Gly Ile Pro Pro Pro Gln Phe Pro Gly Phe Pro
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Pro Pro Val Pro Pro Gly Thr Pro Met Ile Pro Val Pro Met Ser Ile
35 40 45
atg gct cct gct cca act gtc tta gta ccc act gtg tct atg gtt gga 374
Met Ala Pro Ala Pro Thr Val Leu Val Pro Thr Val Ser Met Val Gly
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Lys His Leu Gly Ala Arg Lys Asp His Pro Gly Leu Lys Ala Lys Glu
65 70 75
aat gat gaa aat tgt ggt cct act acc act gtt ttt gtt ggc aac att 470
Asn Asp Glu Asn Cys Gly Pro Thr Thr Val Phe Val Gly Asn Ile
80 85 90

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Asp Lys Asn Ala Thr Lys Gly Thr Val Asn Thr Glu Glu Lys Arg Lys
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His Ile Lys Ser Leu Ile Glu Lys Ile Pro Thr Ala Lys Pro Glu Leu
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Phe Ala Tyr Pro Leu Asp Trp Ser Ile Val Asp Ser Ile Leu Met Glu
755 760 765

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785 790 795 800

His Ser Ser Pro Gln Ser Ile Leu Asp Asp Val Ala Met Val Leu Asp
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175	180	185	190
gac gat gaa gaa gcc ttg gat gaa gaa aca aag agg aga gat cag atg			806
Asp Asp Glu Glu Ala Leu Asp Glu Glu Thr Lys Arg Arg Asp Gln Met			
195	200	205	
att aaa ggg gct att gaa gtt tta att cgt gaa tac tcc agt gag cta			854
Ile Lys Gly Ala Ile Glu Val Leu Ile Arg Glu Tyr Ser Ser Glu Leu			
210	215	220	
aat gcc ccc tca cag gaa tct gat tct cac ccc agg aag aag aag aag			902
Asn Ala Pro Ser Gln Glu Ser Asp Ser His Pro Arg Lys Lys Lys Lys			
225	230	235	
gaa aag aag gag gac att ttc cgc aga ttt cca gtg gcc cca ctg atc			950
Glu Lys Glu Asp Ile Phe Arg Arg Phe Pro Val Ala Pro Leu Ile			
240	245	250	
cct tat cca ctc atc act aag gag gat ata aat gct ata gaa atg gaa			998
Pro Tyr Pro Leu Ile Thr Lys Glu Asp Ile Asn Ala Ile Glu Met Glu			
255	260	265	270
gaa gac aaa aga gac ctg ata tct cga gag atc agc aaa ttc aga gac			1046
Glu Asp Lys Arg Asp Leu Ile Ser Arg Glu Ile Ser Lys Phe Arg Asp			
275	280	285	
aca cat aag aaa ctg gaa gaa gag aaa ggc aaa aag gaa aaa gaa aga			1094
Thr His Lys Lys Leu Glu Glu Lys Gly Lys Lys Glu Lys Glu Arg			
290	295	300	
cag gaa att gag aaa gaa cgg aga gaa aga gag agg gag cgt gaa agg			1142
Gln Glu Ile Glu Lys Glu Arg Arg Glu Arg Glu Arg Glu Arg Glu Arg			
305	310	315	
gaa cga gaa agg cga gaa cgg gaa cga gaa agg gaa cga gag cgg gaa			1190
Glu Arg Glu Arg Arg Glu Arg Glu Arg Glu Arg Glu Arg Glu Arg Glu			
320	325	330	
aga gag aga gag aga gaa cga gag cga gaa cga gaa cgg gag cga gag			1238
Arg Glu			
335	340	345	350
aga gag cga gag agg gaa cgg gag cga gaa aga gaa aaa gac aaa aaa			1286
Arg Glu Arg Glu Arg Glu Arg Glu Arg Glu Arg Glu Lys Asp Lys Lys			
355	360	365	
cgg gac cga gaa gaa gat gaa gaa gat gca tac gaa cga aga aaa ctt			1334
Arg Asp Arg Glu Glu Asp Glu Glu Asp Ala Tyr Glu Arg Arg Lys Leu			
370	375	380	
gaa aga aaa ctc cga gag aaa gaa gct gct tat caa gag cgc ctt aag			1382

Glu Arg Lys Leu Arg Glu Lys Glu Ala Ala Tyr Gln Glu Arg Leu Lys		
385	390	395
aat tgg gaa atc aga gaa cga aag aaa acc cg ^g gaa tat gag aaa gaa		1430
Asn Trp Glu Ile Arg Glu Arg Lys Lys Thr Arg Glu Tyr Glu Lys Glu		
400	405	410
gct gaa aga gaa gaa aga aga aqa gaa atg gcc aaa gaa gct aaa		1478
Ala Glu Arg Glu Glu Arg Arg Glu Met Ala Lys Glu Ala Lys		
415	420	425
cga cta aaa gaa ttc tta gaa gac tat gat gat gat aga gat gac ccc		1526
Arg Leu Lys Glu Phe Leu Glu Asp Tyr Asp Asp Asp Arg Asp Asp Pro		
435	440	445
aaa tat tac aga gga agt gct ctt cag aaa agg ttg cgt gat aga gaa		1574
Lys Tyr Tyr Arg Gly Ser Ala Leu Gln Lys Arg Leu Arg Asp Arg Glu		
450	455	460
aag gaa atg gaa gca gat gaa cga gat agg aag aga gag aag gag gag		1622
Lys Glu Met Glu Ala Asp Glu Arg Asp Arg Lys Arg Glu Lys Glu Glu		
465	470	475
ctt gag gaa atc agg cag cgc ctt ctg gca gaa ggg cat cca gat cca		1670
Leu Glu Glu Ile Arg Gln Arg Leu Leu Ala Glu Gly His Pro Asp Pro		
480	485	490
gat gca gag ctc cag agg atg gaa caa gag gct gag agg cgc agg cag		1718
Asp Ala Glu Leu Gln Arg Met Glu Gln Glu Ala Glu Arg Arg Arg Gln		
495	500	505
cca caa ata aag caa gag cca gaa tca gaa gag gag gaa gaa aag		1766
Pro Gln Ile Lys Gln Glu Pro Glu Ser Glu Glu Glu Glu Glu Lys		
515	520	525
caa gaa aaa gaa gaa aaa cga gaa gaa ccc atg gaa gag gaa gag gag		1814
Gln Glu Lys Glu Lys Arg Glu Glu Pro Met Glu Glu Glu Glu Glu		
530	535	540
cca gag caa aag cct tgt ctg aaa cct act ctg agg ccc atc agc tct		1862
Pro Glu Gln Lys Pro Cys Leu Lys Pro Thr Leu Arg Pro Ile Ser Ser		
545	550	555
gct cca tct gtt tcc tct gcc agt ggc aat gca aca cct aac act cct		1910
Aia Pro Ser Val Ser Ser Ala Ser Gly Asn Ala Thr Pro Asn Thr Pro		
560	565	570
ggg gat gag tct ccc tgt ggt att att att cct cat gaa aac tca cca		1958
Gly Asp Glu Ser Pro Cys Gly Ile Ile Pro His Glu Asn Ser Pro		
575	580	585
590		
gat caa cag caa cct gag gag cat agg cca aaa ata gga cta agt ctt		2006
Asp Gln Gln Gln Pro Glu Glu His Arg Pro Lys Ile Gly Leu Ser Leu		
595	600	605
aaa ctg ggt gct tcc aat agt cct ggt cag cct aat tct gtg aag aga		2054
Lys Ieu Gly Ala Ser Asn Ser Pro Gly Gln Pro Asn Ser Val Lys Arg		
610	615	620
aag aaa cta cct gta gat agt gtc ttt aac aaa ttt gag gat gaa gac		2102
Lys Lys Leu Pro Val Asp Ser Val Phe Asn Lys Phe Glu Asp Glu Asp		
625	630	635
agt gat gac gta ccc cga aaa agg aaa ctg gtt ccc ttg gat tat ggt		2150

Ser Asp Asp Val Pro Arg Lys Arg Lys Leu Val Pro Leu Asp Tyr Gly			
640	645	650	
gaa gat gat aaa aat gca acc aaa ggc act gta aac act gaa gaa aag			2198
Glu Asp Asp Lys Asn Ala Thr Lys Gly Thr Val Asn Thr Glu Glu Lys			
655	660	665	670
cgt aaa cac att aag agt ctc att gag aaa atc cct aca gcc aaa cct			2246
Arg Lys His Ile Lys Ser Leu Ile Glu Lys Ile Pro Thr Ala Lys Pro			
675	680	685	
gag ctc ttc gct tat ccc ctg gat tgg tct att gtg gat tct ata ctg			2294
Glu Leu Phe Ala Tyr Pro Leu Asp Trp Ser Ile Val Asp Ser Ile Leu			
690	695	700	
atg gaa cgt cga att aga cca tgg att aat aag aaa atc ata gaa tat			2342
Met Glu Arg Arg Ile Arg Pro Trp Ile Asn Lys Lys Ile Ile Glu Tyr			
705	710	715	
ata ggt gaa gaa gaa gct aca tta gtt gat ttt gtt tgt tct aag gtt			2390
Ile Gly Glu Glu Ala Thr Leu Val Asp Phe Val Cys Ser Lys Val			
720	725	730	
atg gct cat agt tca ccc cag agc att tta gat gat gtt gcc atg gta			2438
Met Ala His Ser Ser Pro Gln Ser Ile Leu Asp Asp Val Ala Met Val			
735	740	745	750
ctt gat gaa gaa gca gaa gtt ttt ata gtc aaa atg tgg aga tta ttg			2486
Leu Asp Glu Glu Ala Glu Val Phe Ile Val Lys Met Trp Arg Leu Leu			
755	760	765	
ata tat gaa aca gaa gcc aag aaa att ggt ctt gtg aag taa			2528
Ile Tyr Glu Ala Lys Lys Ile Gly Leu Val Lys			
770	775		
aacttttat attagagtt ccatttcaga tttcttcttt gccacccttt taaggacttt			2588
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Val Pro Pro Gly Thr Pro Met Ile Pro Val Pro Met Ser Ile Met Ala
35 40 45

Pro Ala Pro Thr Val Leu Val Pro Thr Val Ser Met Val Gly Lys His
50 55 60

Leu Gly Ala Arg Lys Asp His Pro Gly Leu Lys Ala Lys Glu Asn Asp
65 70 75 80

Glu Asn Cys Gly Pro Thr Thr Val Phe Val Gly Asn Ile Ser Glu
85 90 95

Lys Ala Ser Asp Met Leu Ile Arg Gln Leu Leu Ala Lys Cys Gly Leu
100 105 110

Val Leu Ser Trp Lys Arg Val Gln Gly Ala Ser Gly Lys Leu Gln Ala
115 120 125

Phe Gly Phe Cys Glu Tyr Lys Glu Pro Glu Ser Thr Leu Arg Ala Leu

130

135

140

Arg Leu Leu His Asp Leu Gln Ile Gly Glu Lys Lys Leu Leu Val Lys
145 150 155 160

Val Asp Ala Lys Thr Lys Ala Gln Leu Asp Glu Trp Lys Ala Lys Lys
165 170 175

Lys Ala Ser Asn Gly Asn Ala Arg Pro Glu Thr Val Thr Asn Asp Asp
180 185 190

Glu Glu Ala Leu Asp Glu Glu Thr Lys Arg Arg Asp Gln Met Ile Lys
195 200 205

Gly Ala Ile Glu Val Leu Ile Arg Glu Tyr Ser Ser Glu Leu Asn Ala
210 215 220

Pro Ser Gln Glu Ser Asp Ser His Pro Arg Lys Lys Lys Lys Glu Lys
225 230 235 240

Lys Glu Asp Ile Phe Arg Arg Phe Pro Val Ala Pro Leu Ile Pro Tyr
245 250 255

Pro Leu Ile Thr Lys Glu Asp Ile Asn Ala Ile Glu Met Glu Glu Asp
260 265 270

Lys Arg Asp Leu Ile Ser Arg Glu Ile Ser Lys Phe Arg Asp Thr His
275 280 285

Lys Lys Leu Glu Glu Lys Gly Lys Lys Glu Lys Glu Arg Gln Glu
290 295 300

Ile Glu Lys Glu Arg Arg Glu Arg Glu Arg Glu Arg Glu Arg Glu Arg
305 310 315 320

Glu Arg Arg Glu
325 330 335

Arg Glu
340 345 350

Arg Glu Arg Glu Arg Glu Arg Glu Lys Asp Lys Lys Arg Asp
355 360 365

Arg Glu Glu Asp Glu Glu Asp Ala Tyr Glu Arg Arg Lys Leu Glu Arg
370 375 380

Lys Leu Arg Glu Lys Glu Ala Ala Tyr Gln Glu Arg Leu Lys Asn Trp

385 390 395 400

Glu Ile Arg Glu Arg Lys Lys Thr Arg Glu Tyr Glu Lys Glu Ala Glu
405 410 415

Arg Glu Glu Glu Arg Arg Glu Met Ala Lys Glu Ala Lys Arg Leu
420 425 430

Lys Glu Phe Leu Glu Asp Tyr Asp Asp Asp Arg Asp Asp Pro Lys Tyr
435 440 445

Tyr Arg Gly Ser Ala Leu Gln Lys Arg Leu Arg Asp Arg Glu Lys Glu
450 455 460

Met Glu Ala Asp Glu Arg Asp Arg Lys Arg Glu Lys Glu Glu Leu Glu
465 470 475 480

Glu Ile Arg Gln Arg Leu Leu Ala Glu Gly His Pro Asp Pro Asp Ala
485 490 495

Glu Leu Gln Arg Met Glu Gln Glu Ala Glu Arg Arg Gln Pro Gln
500 505 510

Ile Lys Gln Glu Pro Glu Ser Glu Glu Glu Glu Glu Lys Gln Glu
515 520 525

Lys Glu Glu Lys Arg Glu Glu Pro Met Glu Glu Glu Glu Pro Glu
530 535 540

Gln Lys Pro Cys Leu Lys Pro Thr Leu Arg Pro Ile Ser Ser Ala Pro
545 550 555 560

Ser Val Ser Ser Ala Ser Gly Asn Ala Thr Pro Asn Thr Pro Gly Asp
565 570 575

Glu Ser Pro Cys Gly Ile Ile Pro His Glu Asn Ser Pro Asp Gln
580 585 590

Gln Gln Pro Glu Glu His Arg Pro Lys Ile Gly Leu Ser Leu Lys Leu
595 600 605

Gly Ala Ser Asn Ser Pro Gly Gln Pro Asn Ser Val Lys Arg Lys Lys
610 615 620

Leu Pro Val Asp Ser Val Phe Asn Lys Phe Glu Asp Glu Asp Ser Asp
625 630 635 640

Asp Val Pro Arg Lys Arg Lys Leu Val Pro Leu Asp Tyr Gly Glu Asp

645

650

655

Asp Lys Asn Ala Thr Lys Gly Thr Val Asn Thr Glu Glu Lys Arg Lys
660 665 670

His Ile Lys Ser Leu Ile Glu Lys Ile Pro Thr Ala Lys Pro Glu Leu
675 680 685

Phe Ala Tyr Pro Leu Asp Trp Ser Ile Val Asp Ser Ile Leu Met Glu
690 695 700

Arg Arg Ile Arg Pro Trp Ile Asn Lys Lys Ile Ile Glu Tyr Ile Gly
705 710 715 720

Glu Glu Glu Ala Thr Leu Val Asp Phe Val Cys Ser Lys Val Met Ala
725 730 735

His Ser Ser Pro Gln Ser Ile Leu Asp Asp Val Ala Met Val Leu Asp
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Met Ala Trp
1

aaa aca ctt ccc att tac ctg ttg ctg ctg tct gtt ttc gtg att 165
Lys Thr Leu Pro Ile Tyr Leu Leu Leu Leu Ser Val Phe Val Ile
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Gln Gln Val Ser Ser Gln Glu Leu Ser Cys Lys Gly Arg Cys Phe Glu
20 25 30 35

tcc ttc gag aga ggg agg gag tgt gac tgc gac gcc caa tgt aag aag 261
Ser Phe Glu Arg Gly Arg Glu Cys Asp Cys Asp Ala Gln Cys Lys Lys
40 45 50

tat gac aag tgc tgt ccc gat tat gag agt ttc tgt gca gaa gtg cat	309
Tyr Asp Lys Cys Cys Pro Asp Tyr Glu Ser Phe Cys Ala Glu Val His	
55	60
	65
aat ccc aca tca cca cca tct tca aag aaa gca cct cca cct tca gga	357
Asn Pro Thr Ser Pro Pro Ser Ser Lys Lys Ala Pro Pro Pro Ser Gly	
70	75
	80
gca tct caa acc atc aaa tca aca acc aaa cgt tca ccc aaa cca cca	405
Ala Ser Gln Thr Ile Lys Ser Thr Thr Lys Arg Ser Pro Lys Pro Pro	
85	90
	95
aac aag aag aag act aag aaa gtt ata gaa tca gag gaa ata aca gaa	453
Asn Lys Lys Lys Thr Lys Lys Val Ile Glu Ser Glu Glu Ile Thr Glu	
100	105
	110
	115
gta aaa gat aac aag aag aac aga act aaa aag aaa cct acc ccc aaa	501
Val Lys Asp Asn Lys Lys Asn Arg Thr Lys Lys Pro Thr Pro Lys	
120	125
	130
cca cca gtt gta gat gaa gct gga agt gga ttg gac aat ggt gac ttc	549
Pro Pro Val Val Asp Glu Ala Gly Ser Gly Leu Asp Asn Gly Asp Phe	
135	140
	145
aag gtc aca act cct gac acg tct acc acc caa cac aat aaa gtc agc	597
Lys Val Thr Thr Pro Asp Thr Ser Thr Thr Gln His Asn Lys Val Ser	
150	155
	160
aca tct ccc aag atc aca aca gca aaa cca ata aat ccc aga ccc agt	645
Thr Ser Pro Lys Ile Thr Thr Ala Lys Pro Ile Asn Pro Arg Pro Ser	
165	170
	175
ctt cca cct aat tct gat aca tct aaa gag acg tct ttg aca gtg aat	693
Leu Pro Pro Asn Ser Asp Thr Ser Lys Glu Thr Ser Leu Thr Val Asn	
180	185
	190
	195
aaa gag aca aca gtt gaa act aaa gaa act act aca aca aat aaa cag	741
Lys Glu Thr Thr Val Glu Thr Lys Glu Thr Thr Thr Asn Lys Gln	
200	205
	210
act tca act gat gga aaa gag aag act act tcc gct aaa gag aca caa	789
Thr Ser Thr Asp Gly Lys Glu Lys Thr Thr Ser Ala Lys Glu Thr Gln	
215	220
	225
agt ata gag aaa aca tct gct aaa gat tta gca ccc aca tct aaa gtg	837
Ser Ile Glu Lys Thr Ser Ala Lys Asp Leu Ala Pro Thr Ser Lys Val	
230	235
	240
ctg gct aaa cct aca ccc aaa gct gaa act aca acc aaa ggc cct gct	885
Leu Ala Lys Pro Thr Pro Lys Ala Glu Thr Thr Lys Gly Pro Ala	
245	250
	255
ctc acc act ccc aag gag ccc acg ccc acc act ccc aag gag cct gca	933
Leu Thr Thr Pro Lys Glu Pro Thr Pro Thr Pro Lys Glu Pro Ala	
260	265
	270
	275
tct acc aca ccc aaa gag ccc aca cct acc acc atc aag tct gca ccc	981
Ser Thr Thr Pro Lys Glu Pro Thr Pro Thr Thr Ile Lys Ser Ala Pro	
280	285
	290
acc acc ccc aag gag cct gca ccc acc acc acc aag tct gca ccc acc	1029
Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr Lys Ser Ala Pro Thr	
295	300
	305

act ccc aag gag cct gca ccc acc acc acc aag gag cct gca ccc acc Thr Pro Lys Glu Pro Ala Pro Thr Thr Thr Lys Glu Pro Ala Pro Thr 310 315 320	1077
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ctc gca ccc acc acc cct gag aag ccc gca ccc acc acc cct gag gag Leu Ala Pro Thr Thr Pro Glu Lys Pro Ala Pro Thr Thr Pro Glu Glu 550 555 560	1797

cct gca ccc acc acc cct gag gag ccc aca ccc acc acc cct gag gag Leu Ala Pro Thr Thr Pro Glu Glu Pro Thr Pro Thr Pro Glu Glu 565 570 575	1845
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acc acc tgt gac aag ccc gct cca act acc cct aag ggg act gct cca Thr Thr Cys Asp Lys Pro Ala Pro Thr Thr Pro Lys Gly Thr Ala Pro 660 665 670 675	2133
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act tct acc aaa aag cca aaa aca atg cct aga gtg aga aaa cca aag Thr Ser Thr Lys Lys Pro Lys Thr Met Pro Arg Val Arg Lys Pro Lys 950 955 960	2997
acg aca cca act ccc cgc aag atg aca tca aca atg cca gaa ttg aac Thr Thr Pro Thr Pro Arg Lys Met Thr Ser Thr Met Pro Glu Leu Asn 965 970 975	3045
cct acc tca aga ata gca gaa gcc atg ctc caa acc acc acc aga cct Pro Thr Ser Arg Ile Ala Glu Ala Met Leu Gln Thr Thr Arg Pro 980 985 990 995	3093
aac caa act cca aac tcc aaa cta gtt gaa gta aat cca aag agt Asn Gln Thr Pro Asn Ser Lys Leu Val Glu Val Asn Pro Lys Ser 1000 1005 1010	3138
gaa gat gca ggt ggt gct gaa gga gaa aca cct cat atg ctt ctc Glu Asp Ala Gly Gly Ala Glu Gly Glu Thr Pro His Met Leu Leu 1015 1020 1025	3183
agg ccc cat gtg ttc atg cct gaa gtt act ccc gac atg gat tac Arg Pro His Val Phe Met Pro Glu Val Thr Pro Asp Met Asp Tyr 1030 1035 1040	3228
tta ccg aga gta ccc aat caa ggc att atc atc aat ccc atg ctt Leu Pro Arg Val Pro Asn Gln Gly Ile Ile Ile Asn Pro Met Leu 1045 1050 1055	3273
tcc gat gag acc aat ata tgc aat ggt aag cca gta gat gga ctg Ser Asp Glu Thr Asn Ile Cys Asn Gly Lys Pro Val Asp Gly Leu 1060 1065 1070	3318

act act ttg cgc aat	ggg aca tta gtt gca	ttc cga ggt cat tat	3363
Ihr Thr Ieu Arg Asn	Gly Thr Leu Val Ala	Phe Arg Gly His Tyr	
1075	1080	1085	
ttc tgg atg cta agt	cca ttc agt cca cca	tct cca gct cgc aga	3408
Phe Trp Met Leu Ser	Pro Phe Ser Pro Pro	Ser Pro Ala Arg Arg	
1090	1095	1100	
att act gaa gtt tgg	ggt att cct tcc ccc	att gat act gtt ttt	3453
Ile Thr Glu Val Trp	Gly Ile Pro Ser Pro	Ile Asp Thr Val Phe	
1105	1110	1115	
act agg tgc aac tgt	gaa gga aaa act ttc	ttc ttt aag gat tct	3498
Thr Arg Cys Asn Cys	Glu Gly Lys Thr Phe	Phe Phe Lys Asp Ser	
1120	1125	1130	
cag tac tgg cgt ttt	acc aat gat ata aaa	gat gca ggg tac ccc	3543
Gln Tyr Trp Arg Phe	Thr Asn Asp Ile Lys	Asp Ala Gly Tyr Pro	
1135	1140	1145	
aaa cca att ttc aaa	gga ttt gga gga cta	act gga caa ata gtg	3588
Lys Pro Ile Phe Lys	Gly Phe Gly Gly Leu	Thr Gly Gln Ile Val	
1150	1155	1160	
gca gcg ctt tca aca	gct aaa tat aag aac	tgg cct gaa tct gtg	3633
Ala Ala Leu Ser Thr	Ala Lys Tyr Lys Asn	Trp Pro Glu Ser Val	
1165	1170	1175	
tat ttt ttc aag aga	ggt ggc agc att cag	cag tat att tat aaa	3678
Tyr Phe Phe Lys Arg	Gly Gly Ser Ile Gln	Gln Tyr Ile Tyr Lys	
1180	1185	1190	
cag gaa cct gta cag	aag tgc cct gga aga	agg cct gct cta aat	3723
Gln Glu Pro Val Gln	Lys Cys Pro Gly Arg	Arg Pro Ala Leu Asn	
1195	1200	1205	
tat cca gtg tat gga	gaa acg aca cag gtt	agg aga cgt cgc ttt	3768
Tyr Pro Val Tyr Gly	Glu Thr Thr Gln Val	Arg Arg Arg Arg Phe	
1210	1215	1220	
gaa cgt gct ata gga	cct tct caa aca cac	acc atc aga att caa	3813
Glu Arg Ala Ile Gly	Pro Ser Gln Thr His	Thr Ile Arg Ile Gln	
1225	1230	1235	
tat tca cct gcc aga	ctg gct tat caa gac	aaa ggt gtc ctt cat	3858
Tyr Ser Pro Ala Arg	Leu Ala Tyr Gln Asp	Lys Gly Val Leu His	
1240	1245	1250	
aat gaa gtt aaa gtg	agt ata ctg tgg aga	gga ctt cca aat gtg	3903
Asn Glu Val Lys Val	Ser Ile Leu Trp Arg	Gly Leu Pro Asn Val	
1255	1260	1265	
gtt acc tca gct ata	tca ctg ccc aac atc	aga aaa cct gac ggc	3948
Val Thr Ser Ala Ile	Ser Leu Pro Asn Ile	Arg Lys Pro Asp Gly	
1270	1275	1280	
tat gat tac tat gcc	ttt tct aaa gat caa	tac tat aac att gat	3993
Tyr Asp Tyr Tyr Ala	Phe Ser Lys Asp Gln	Tyr Tyr Asn Ile Asp	
1285	1290	1295	
gtg cct agt aga aca	gca aga gca att act	act cgt tct ggg cag	4038
Val Pro Ser Arg Thr	Ala Arg Ala Ile Thr	Thr Arg Ser Gly Gln	
1300	1305	1310	

acc tta tcc aaa gtc	tgg tac aac tgt cct	tagactgatg agcaaaggag	4088
Thr Leu Ser Lys Val	Trp Tyr Asn Cys Pro		
1315	1320		
gagtcaacta atgaagaataat gaataataaaa ttttgacact gaaaaacatt ttattaataa 4148			
agaatattga catgagtata ccagttata tataaaaatg tttttaact tgacaatcat 4208			
tacactaaaa cagatttgat aatcttattc acagttgtta ttgtttacag accatttaat 4268			
taatatttcc tctgttttatt cctcctctcc ctcccattgc atggctcaca cctgtaaaag 4328			
aduuuagaat caaattgaat atatctttta agaattcaaa actagtgtat tcacttaccc 4388			
tagttcatta taaaaaatat ctaggcatttggatataaa actgttgggt attctacaac 4448			
ttcaatggaa attattacaa gcagattaat ccctctttt gtgacacaag tacaatctaa 4508			
aagttatatt ggaaaacatg gaaatattaa aattttcacac ttttactagc taaaacataa 4568			
tcacaaagct ttatcggtt gtataaaaaaa attaacaata taatggcaat aggtagagat 4628			
acaacaaatg aatataacac tataacactt catatttcc aaatcttaat ttggatttaa 4688			
ggaagaaaatc aataaatata aaatataagc acatatttat tatatatcta aggtatacaa 4748			
atctgtctac atgaagttt cagattggta aatatcacct gctcaacatg taattattta 4808			
ataaaaactt ggaacattaa aaaaataaaat tggaggc 4847			

<210> 58
<211> 1320
<212> PRT
<213> Homo sapiens

<400> 58

Met Ala Trp Lys Thr Leu Pro Ile Tyr Leu Leu Leu Leu Leu Ser Val
1 5 10 15

Phe Val Ile Gln Gln Val Ser Ser Gln Glu Leu Ser Cys Lys Gly Arg
20 25 30

Cys Phe Glu Ser Phe Glu Arg Gly Arg Glu Cys Asp Cys Asp Ala Gln
35 40 45

Cys Lys Lys Tyr Asp Lys Cys Cys Pro Asp Tyr Glu Ser Phe Cys Ala
50 55 60

Glu Val His Asn Pro Thr Ser Pro Pro Ser Ser Lys Lys Ala Pro Pro
65 70 75 80

Pro Ser Gly Ala Ser Gln Thr Ile Lys Ser Thr Thr Lys Arg Ser Pro
85 90 95

Lys Pro Pro Asn Lys Lys Thr Lys Lys Val Ile Glu Ser Glu Glu

100

105

110

Ile Thr Glu Val Lys Asp Asn Lys Lys Asn Arg Thr Lys Lys Lys Pro
115 120 125

Thr Pro Lys Pro Pro Val Val Asp Glu Ala Gly Ser Gly Leu Asp Asn
130 135 140

Gly Asp Phe Lys Val Thr Thr Pro Asp Thr Ser Thr Thr Gln His Asn
145 150 155 160

Lys Val Ser Thr Ser Pro Lys Ile Thr Thr Ala Lys Pro Ile Asn Pro
165 170 175

Arg Pro Ser Leu Pro Pro Asn Ser Asp Thr Ser Lys Glu Thr Ser Leu
180 185 190

Thr Val Asn Lys Glu Thr Thr Val Glu Thr Lys Glu Thr Thr Thr Thr
195 200 205

Asn Lys Gln Thr Ser Thr Asp Gly Lys Glu Lys Thr Thr Ser Ala Lys
210 215 220

Glu Thr Gln Ser Ile Glu Lys Thr Ser Ala Lys Asp Leu Ala Pro Thr
225 230 235 240

Ser Lys Val Leu Ala Lys Pro Thr Pro Lys Ala Glu Thr Thr Thr Lys
245 250 255

Gly Pro Ala Leu Thr Thr Pro Lys Glu Pro Thr Pro Thr Thr Pro Lys
260 265 270

Glu Pro Ala Ser Thr Thr Pro Lys Glu Pro Thr Pro Thr Thr Ile Lys
275 280 285

Ser Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr Thr Lys Ser
290 295 300

Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr Thr Lys Glu Pro
305 310 315 320

Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr Thr Lys Glu Pro
325 330 335

Ala Pro Thr Thr Thr Lys Ser Ala Pro Thr Thr Pro Lys Glu Pro Ala
340 345 350

Pro Thr Thr Pro Lys Lys Pro Ala Pro Thr Thr Pro Lys Glu Pro Ala

355

360

365

Pro Thr Thr Pro Lys Glu Pro Thr Pro Thr Thr Pro Lys Glu Pro Ala
370 375 380

Pro Thr Thr Lys Glu Pro Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro
385 390 395 400

Thr Ala Pro Lys Lys Pro Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro
405 410 415

Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr Thr Lys Glu Pro Ser Pro
420 425 430

Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr Thr Lys Ser Ala Pro Thr
435 440 445

Thr Thr Lys Glu Pro Ala Pro Thr Thr Thr Lys Ser Ala Pro Thr Thr
450 455 460

Pro Lys Glu Pro Ser Pro Thr Thr Thr Lys Glu Pro Ala Pro Thr Thr
465 470 475 480

Pro Lys Glu Pro Ala Pro Thr Thr Pro Lys Lys Pro Ala Pro Thr Thr
485 490 495

Pro Lys Glu Pro Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr
500 505 510

Thr Lys Lys Pro Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr
515 520 525

Pro Lys Glu Thr Ala Pro Thr Thr Pro Lys Lys Leu Thr Pro Thr Thr
530 535 540

Pro Glu Lys Leu Ala Pro Thr Thr Pro Glu Lys Pro Ala Pro Thr Thr
545 550 555 560

Pro Glu Glu Leu Ala Pro Thr Thr Pro Glu Glu Pro Thr Pro Thr Thr
565 570 575

Pro Glu Glu Pro Ala Pro Thr Thr Pro Lys Ala Ala Ala Pro Asn Thr
580 585 590

Pro Lys Glu Pro Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr
595 600 605

Pro Lys Glu Pro Ala Pro Thr Thr Pro Lys Glu Thr Ala Pro Thr Thr

610

615

620

Pro Lys Gly Thr Ala Pro Thr Thr Leu Lys Glu Pro Ala Pro Thr Thr
625 630 635 640

Pro Lys Lys Pro Ala Pro Lys Glu Leu Ala Pro Thr Thr Thr Lys Glu
645 650 655

Pro Thr Ser Thr Thr Cys Asp Lys Pro Ala Pro Thr Thr Pro Lys Gly
660 665 670

Thr Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr Pro Lys Glu
675 680 685

Pro Ala Pro Thr Thr Pro Lys Gly Thr Ala Pro Thr Thr Leu Lys Glu
690 695 700

Pro Ala Pro Thr Thr Pro Lys Lys Pro Ala Pro Lys Glu Leu Ala Pro
705 710 715 720

Thr Thr Thr Lys Gly Pro Thr Ser Thr Thr Ser Asp Lys Pro Ala Pro
725 730 735

Thr Thr Pro Lys Glu Thr Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro
740 745 750

Thr Thr Pro Lys Lys Pro Ala Pro Thr Thr Pro Glu Thr Pro Pro Pro
755 760 765

Thr Thr Ser Glu Val Ser Thr Pro Thr Thr Thr Lys Glu Pro Thr Thr
770 775 780

Ile His Lys Ser Pro Asp Glu Ser Thr Pro Glu Leu Ser Ala Glu Pro
785 790 795 800

Thr Pro Lys Ala Leu Glu Asn Ser Pro Lys Glu Pro Gly Val Pro Thr
805 810 815

Thr Lys Thr Pro Ala Ala Thr Lys Pro Glu Met Thr Thr Ala Lys
820 825 830

Asp Lys Thr Thr Glu Arg Asp Leu Arg Thr Thr Pro Glu Thr Thr Thr
835 840 845

Ala Ala Pro Lys Met Thr Lys Glu Thr Ala Thr Thr Glu Lys Thr
850 855 860

Thr Glu Ser Lys Ile Thr Ala Thr Thr Gln Val Thr Ser Thr Thr

865 870 875 880

Thr Gln Asp Thr Thr Pro Phe Lys Ile Thr Thr Leu Lys Thr Thr Thr
885 890 895

Leu Ala Pro Lys Val Thr Thr Lys Lys Thr Ile Thr Thr Thr Glu
900 905 910

Ile Met Asn Lys Pro Glu Glu Thr Ala Lys Pro Lys Asp Arg Ala Thr
915 920 925

Asn Ser Lys Ala Thr Thr Pro Lys Pro Gln Lys Pro Thr Lys Ala Pro
930 935 940

Lys Lys Pro Thr Ser Thr Lys Lys Pro Lys Thr Met Pro Arg Val Arg
945 950 955 960

Lys Pro Lys Thr Thr Pro Thr Pro Arg Lys Met Thr Ser Thr Met Pro
965 970 975

Glu Leu Asn Pro Thr Ser Arg Ile Ala Glu Ala Met Leu Gln Thr Thr
980 985 990

Thr Arg Pro Asn Gln Thr Pro Asn Ser Lys Leu Val Glu Val Asn Pro
995 1000 1005

Lys Ser Glu Asp Ala Gly Gly Ala Glu Gly Glu Thr Pro His Met
1010 1015 1020

Leu Leu Arg Pro His Val Phe Met Pro Glu Val Thr Pro Asp Met
1025 1030 1035

Asp Tyr Leu Pro Arg Val Pro Asn Gln Gly Ile Ile Ile Asn Pro
1040 1045 1050

Met Leu Ser Asp Glu Thr Asn Ile Cys Asn Gly Lys Pro Val Asp
1055 1060 1065

Gly Leu Thr Thr Leu Arg Asn Gly Thr Leu Val Ala Phe Arg Gly
1070 1075 1080

His Tyr Phe Trp Met Leu Ser Pro Phe Ser Pro Pro Ser Pro Ala
1085 1090 1095

Arg Arg Ile Thr Glu Val Trp Gly Ile Pro Ser Pro Ile Asp Thr
1100 1105 1110

Val Phe Thr Arg Cys Asn Cys Glu Gly Lys Thr Phe Phe Phe Lys

1118 1120 1125

Asp Ser Gln Tyr Trp Arg Phe Thr Asn Asp Ile Lys Asp Ala Gly
1130 1135 1140

Tyr Pro Lys Pro Ile Phe Lys Gly Phe Gly Gly Leu Thr Gly Gln
1145 1150 1155

Ile Val Ala Ala Leu Ser Thr Ala Lys Tyr Lys Asn Trp Pro Glu
1160 1165 1170

Ser Val Tyr Phe Phe Lys Arg Gly Gly Ser Ile Gln Gln Tyr Ile
1175 1180 1185

Tyr Lys Gln Glu Pro Val Gln Lys Cys Pro Gly Arg Arg Pro Ala
1190 1195 1200

Leu Asn Tyr Pro Val Tyr Gly Glu Thr Thr Gln Val Arg Arg Arg
1205 1210 1215

Arg Phe Glu Arg Ala Ile Gly Pro Ser Gln Thr His Thr Ile Arg
1220 1225 1230

Ile Gln Tyr Ser Pro Ala Arg Leu Ala Tyr Gln Asp Lys Gly Val
1235 1240 1245

Leu His Asn Glu Val Lys Val Ser Ile Leu Trp Arg Gly Leu Pro
1250 1255 1260

Asn Val Val Thr Ser Ala Ile Ser Leu Pro Asn Ile Arg Lys Pro
1265 1270 1275

Asp Gly Tyr Asp Tyr Tyr Ala Phe Ser Lys Asp Gln Tyr Tyr Asn
1280 1285 1290

Ile Asp Val Pro Ser Arg Thr Ala Arg Ala Ile Thr Thr Arg Ser
1295 1300 1305

Gly Gln Thr Leu Ser Lys Val Trp Tyr Asn Cys Pro
1310 1315 1320

<210> 59
<211> 258
<212> PRT
<213> Homo sapiens

<400> 59

Met Glu Val Lys Pro Pro Pro Gly Arg Pro Gln Pro Asp Ser Gly Arg
1 5 10 15

Arg Arg Arg Arg Arg Gly Glu Glu Gly His Asp Pro Lys Glu Pro Glu
20 25 30

Gln Leu Arg Lys Leu Phe Ile Gly Gly Leu Ser Phe Glu Thr Thr Asp
35 40 45

Asp Ser Leu Arg Glu His Phe Glu Lys Trp Gly Thr Leu Thr Asp Cys
50 55 60

Val Val Met Arg Asp Pro Gln Thr Lys Arg Ser Arg Gly Phe Gly Phe
65 70 75 80

Val Thr Tyr Ser Cys Val Glu Glu Val Asp Ala Ala Met Cys Ala Arg
85 90 95

Pro His Lys Val Asp Gly Arg Val Val Glu Pro Lys Arg Ala Val Ser
100 105 110

Arg Glu Asp Ser Val Lys Pro Gly Ala His Leu Thr Val Lys Lys Ile
115 120 125

Phe Val Gly Gly Ile Lys Glu Asp Thr Glu Glu Tyr Asn Leu Arg Asp
130 135 140

Tyr Phe Glu Lys Tyr Gly Lys Ile Glu Thr Ile Glu Val Met Glu Asp
145 150 155 160

Arg Gln Ser Gly Lys Lys Arg Gly Phe Ala Phe Val Thr Phe Asp Asp
165 170 175

His Asp Thr Val Asp Lys Ile Val Val Gln Lys Tyr His Thr Ile Asn
180 185 190

Gly His Asn Cys Glu Val Lys Lys Ala Leu Ser Lys Gln Glu Met Gln
195 200 205

Ser Ala Gly Ser Gln Arg Gly Arg Gly Gly Ser Gly Asn Phe Met
210 215 220

Gly Arg Gly Gly Asn Phe Gly Gly Gly Asn Phe Gly Arg Gly
225 230 235 240

Gly Asn Phe Gly Gly Arg Gly Arg Leu Trp Trp Trp Arg Trp Trp Gln
245 250 255

Gln Arg

<210> 60
<211> 496
<212> PRT
<213> Homo sapiens

<400> 60

Met Thr Ala Gly Ile Asn Ala Asp Gly His Leu Ile Asn Thr Gly Gln
1 5 10 15

Ala Met Asp Ser Ser Asp Asn Ser Glu Arg Thr Gly Glu Arg Val Ser
20 25 30

Pro Asp Ile Asn Glu Thr Asn Thr Asp Thr Asp Leu Phe Val Pro Thr
35 40 45

Ser Ser Ser Ser Gln Leu Pro Val Thr Ile Asp Ser Thr Gly Ile Leu
50 55 60

Gln Gln Asn Thr Asn Ser Leu Thr Thr Ser Ser Gly Gln Val His Ser
65 70 75 80

Ser Asp Leu Gln Gly Asn Tyr Ile Gln Ser Pro Val Ser Glu Glu Thr
85 90 95

Gln Ala Gln Asn Ile Gln Val Ser Thr Ala Gln Pro Val Val Gln His
100 105 110

Leu Gln Leu Gln Glu Ser Gln Gln Pro Thr Ser Gln Ala Gln Ile Val
115 120 125

Gln Gly Ile Thr Pro Gln Thr Ile His Gly Val Gln Ala Ser Gly Gln
130 135 140

Asn Ile Ser Gln Gln Ala Leu Gln Asn Leu Gln Leu Gln Leu Asn Pro
145 150 155 160

Gly Thr Phe Leu Ile Gln Ala Gln Thr Val Thr Pro Ser Gly Gln Val
165 170 175

Thr Trp Gln Thr Phe Gln Val Gln Gly Val Gln Asn Leu Gln Asn Leu
180 185 190

Gln Ile Gln Asn Thr Ala Ala Gln Gln Ile Thr Leu Thr Pro Val Gln
195 200 205

Thr Leu Thr Leu Gly Gln Val Ala Ala Gly Gly Ala Phe Thr Ser Thr
210 215 220

Pro Val Ser Leu Ser Thr Gly Gln Leu Pro Asn Leu Gln Thr Val Thr
225 230 235 240

Val Asn Ser Ile Asp Ser Ala Gly Ile Gln Leu His Pro Gly Glu Asn
245 250 255

Ala Asp Ser Pro Ala Asp Ile Arg Ile Lys Glu Glu Glu Pro Asp Pro
260 265 270

Glu Glu Trp Gln Leu Ser Gly Asp Ser Thr Leu Asn Thr Asn Asp Leu
275 280 285

Thr His Leu Arg Val Gln Val Val Asp Glu Glu Gly Asp Gln Gln His
290 295 300

Gln Glu Gly Lys Arg Leu Arg Arg Val Ala Cys Thr Cys Pro Asn Cys
305 310 315 320

Lys Glu Gly Gly Arg Gly Thr Asn Leu Gly Lys Lys Lys Gln His
325 330 335

Ile Cys His Ile Pro Gly Cys Gly Lys Val Tyr Gly Lys Thr Ser His
340 345 350

Leu Arg Ala His Leu Arg Trp His Ser Gly Glu Arg Pro Phe Val Cys
355 360 365

Asn Trp Met Tyr Cys Gly Lys Arg Phe Thr Arg Ser Asp Glu Leu Gln
370 375 380

Arg His Arg Arg Thr His Thr Gly Glu Lys Lys Phe Val Cys Pro Glu
385 390 395 400

Cys Ser Lys Arg Phe Met Arg Ser Asp His Leu Ala Lys His Ile Lys
405 410 415

Thr His Gln Asn Lys Lys Gly Ile His Ser Ser Ser Thr Val Leu Ala
420 425 430

Ser Val Glu Ala Ala Arg Asp Asp Thr Leu Ile Thr Ala Gly Gly Thr
435 440 445

Thr Leu Ile Leu Ala Lys Ile Gln Gln Gly Ser Val Ser Gly Ile Gly
450 455 460

Thr Val Asn Thr Ser Ala Thr Ser Asn Gln Asp Ile Leu Thr Asn Thr
465 470 475 480

Glu Ile Pro Leu Gln Leu Val Thr Val Ser Gly Asn Glu Thr Met Glu
485 490 495

<210> 61
<211> 315
<212> PRT
<213> Homo sapiens

<400> 61

Met Asp Leu Arg Gln Phe Leu Met Cys Leu Ser Leu Cys Thr Ala Phe
1 5 10 15

Ala Leu Ser Lys Pro Thr Glu Lys Lys Asp Arg Val His His Glu Pro
20 25 30

Gln Leu Ser Asp Lys Val His Asn Asp Ala Gln Ser Phe Asp Tyr Asp
35 40 45

His Asp Ala Phe Leu Gly Ala Glu Glu Ala Lys Thr Phe Asp Gln Leu
50 55 60

Thr Pro Glu Glu Ser Lys Glu Arg Leu Gly Lys Ile Val Ser Lys Ile
65 70 75 80

Asp Gly Asp Lys Asp Gly Phe Val Thr Val Asp Glu Leu Lys Asp Trp
85 90 95

Ile Lys Phe Ala Gln Lys Arg Trp Ile Tyr Glu Asp Val Glu Arg Gln
100 105 110

Trp Lys Gly His Asp Leu Asn Glu Asp Gly Leu Val Ser Trp Glu Glu
115 120 125

Tyr Lys Asn Ala Thr Tyr Gly Tyr Val Leu Asp Asp Pro Asp Pro Asp
130 135 140

Asp Gly Phe Asn Tyr Lys Gln Met Met Val Arg Asp Glu Arg Arg Phe
145 150 155 160

Lys Met Ala Asp Lys Asp Gly Asp Leu Ile Ala Thr Lys Glu Glu Phe
165 170 175

Thr Ala Phe Leu His Pro Glu Glu Tyr Asp Tyr Met Lys Asp Ile Val
180 185 190

Val Gln Glu Thr Met Glu Asp Ile Asp Lys Asn Ala Asp Gly Phe Ile
195 200 205

Asp Leu Glu Glu Tyr Ile Gly Asp Met Tyr Ser His Asp Gly Asn Thr
210 215 220

Asp Glu Pro Glu Trp Val Lys Thr Glu Arg Glu Gln Phe Val Glu Phe
225 230 235 240

Arg Asp Lys Asn Arg Asp Gly Lys Met Asp Lys Glu Glu Thr Lys Asp
245 250 255

Trp Ile Leu Pro Ser Asp Tyr Asp His Ala Glu Ala Glu Ala Arg His
260 265 270

Leu Val Tyr Glu Ser Asp Gln Asn Lys Asp Gly Lys Leu Thr Lys Glu
275 280 285

Glu Ile Val Asp Lys Tyr Asp Leu Phe Val Gly Ser Gln Ala Thr Asp
290 295 300

Phe Gly Glu Ala Leu Val Arg His Asp Glu Phe
305 310 315

<210> 62
<211> 336
<212> PRT
<213> Homo sapiens

<400> 62

Met Arg Ala Pro Ser Met Asp Arg Ala Ala Val Ala Arg Val Gly Ala
1 5 10 15

Val Ala Ser Ala Ser Val Cys Ala Leu Val Ala Gly Val Val Leu Ala
20 25 30

Gln Tyr Ile Phe Thr Leu Lys Arg Lys Thr Gly Arg Lys Thr Lys Ile
35 40 45

Ile Glu Met Met Pro Glu Phe Gln Lys Ser Ser Val Arg Ile Lys Asn
50 55 60

Pro Thr Arg Val Glu Glu Ile Ile Cys Gly Leu Ile Lys Gly Gly Ala
65 70 75 80

Ala Lys Leu Gln Ile Ile Thr Asp Phe Asp Met Thr Leu Ser Arg Phe
85 90 95

Ser Tyr Lys Gly Lys Arg Cys Pro Thr Cys His Asn Ile Ile Asp Asn
100 105 110

Cys Lys Leu Val Thr Asp Glu Cys Arg Lys Lys Leu Leu Gln Leu Lys

115

120

125

Glu Lys Tyr Tyr Ala Ile Glu Val Asp Pro Val Leu Thr Val Glu Glu
130 135 140

Lys Tyr Pro Tyr Met Val Glu Trp Tyr Thr Lys Ser His Gly Leu Leu
145 150 155 160

Val Gln Gln Ala Leu Pro Lys Ala Lys Leu Lys Glu Ile Val Ala Glu
165 170 175

Ser Asp Val Met Leu Lys Glu Gly Tyr Glu Asn Phe Phe Asp Lys Leu
180 185 190

Gln Gln His Ser Ile Pro Val Phe Ile Phe Ser Ala Gly Ile Gly Asp
195 200 205

Val Leu Glu Glu Val Ile Arg Gln Ala Gly Val Tyr His Pro Asn Val
210 215 220

Lys Val Val Ser Asn Phe Met Asp Phe Asp Glu Thr Gly Val Leu Lys
225 230 235 240

Gly Phe Lys Gly Glu Leu Ile His Val Phe Asn Lys His Asp Gly Ala
245 250 255

Leu Arg Asn Thr Glu Tyr Phe Asn Gln Leu Lys Asp Asn Ser Asn Ile
260 265 270

Ile Leu Leu Gly Asp Ser Gln Gly Asp Leu Arg Met Ala Asp Gly Val
275 280 285

Ala Asn Val Glu His Ile Leu Lys Ile Gly Tyr Leu Asn Asp Arg Val
290 295 300

Asp Glu Leu Leu Glu Lys Tyr Met Asp Ser Tyr Asp Ile Val Leu Val
305 310 315 320

Gln Asp Glu Ser Leu Glu Val Ala Asn Ser Ile Leu Gln Lys Ile Leu
325 330 335

<210> 63
<211> 472
<212> PRT
<213> Homo sapiens

<400> 63

Met Ala Leu Gly Leu Glu Gln Ala Glu Glu Gln Arg Leu Tyr Gln Gln
1 5 10 15

Thr Leu Leu Gln Asp Gly Leu Lys Asp Met Leu Asp His Gly Lys Phe
20 25 30

Leu Asp Cys Val Val Arg Ala Gly Glu Arg Glu Phe Pro Cys His Arg
35 40 45

Leu Val Leu Ala Ala Cys Ser Pro Tyr Phe Arg Ala Arg Phe Leu Ala
50 55 60

Glu Pro Glu Arg Ala Gly Glu Leu His Leu Glu Glu Val Ser Pro Asp
65 70 75 80

Val Val Ala Gln Val Leu His Tyr Leu Tyr Thr Ser Glu Ile Ala Leu
85 90 95

Asp Glu Ala Ser Val Gln Asp Leu Phe Ala Ala Ala His Arg Phe Gln
100 105 110

Ile Pro Ser Ile Phe Thr Ile Cys Val Ser Phe Leu Gln Lys Arg Leu
115 120 125

Cys Leu Ser Asn Cys Leu Ala Val Phe Arg Leu Gly Leu Leu Leu Asp
130 135 140

Cys Ala Arg Leu Ala Val Ala Ala Arg Asp Phe Ile Cys Ala His Phe
145 150 155 160

Thr Leu Val Ala Arg Asp Ala Asp Phe Leu Gly Leu Ser Ala Asp Glu
165 170 175

Leu Ile Ala Ile Ile Ser Ser Asp Gly Leu Asn Val Glu Lys Glu Glu
180 185 190

Ala Val Phe Glu Ala Val Met Arg Trp Ala Gly Ser Gly Asp Ala Glu
195 200 205

Ala Gln Ala Glu Arg Gln Arg Ala Leu Pro Thr Val Phe Glu Ser Val
210 215 220

Arg Cys Arg Leu Leu Pro Arg Ala Phe Leu Glu Ser Arg Val Glu Arg
225 230 235 240

His Pro Leu Val Arg Ala Gln Pro Glu Leu Leu Arg Lys Val Gln Met
245 250 255

Val Lys Asp Ala His Glu Gly Arg Ile Thr Thr Leu Arg Lys Lys Lys
260 265 270

Lys Gly Lys Asp Gly Ala Gly Ala Lys Glu Ala Asp Lys Gly Thr Ser
275 280 285

Lys Ala Lys Ala Glu Glu Asp Glu Glu Ala Glu Arg Ile Leu Pro Gly
290 295 300

Ile Leu Asn Asp Thr Leu Arg Phe Gly Met Phe Leu Gln Asp Leu Ile
305 310 315 320

Phe Met Ile Ser Glu Glu Gly Ala Val Ala Tyr Asp Pro Ala Ala Asn
325 330 335

Glu Cys Tyr Cys Ala Ser Leu Ser Asn Gln Val Pro Lys Asn His Val
340 345 350

Ser Leu Val Thr Lys Glu Asn Gln Val Phe Val Ala Gly Gly Leu Phe
355 360 365

Tyr Asn Glu Asp Asn Lys Glu Asp Pro Met Ser Ala Tyr Phe Leu Gln
370 375 380

Phe Asp His Leu Asp Ser Glu Trp Leu Gly Met Pro Pro Leu Pro Ser
385 390 395 400

Pro Arg Cys Leu Phe Gly Leu Gly Glu Ala Leu Asn Ser Ile Tyr Val
405 410 415

Val Gly Gly Arg Glu Ile Lys Asp Gly Glu Arg Cys Leu Asp Ser Val
420 425 430

Met Cys Tyr Asp Arg Leu Ser Phe Lys Trp Gly His Arg His Arg Ala
435 440 445

Asp Gln Phe Cys Arg Ser Val Gln His His Arg Gln Gln Val Gly Thr
450 455 460

Leu Arg Gly Leu Pro Thr Gly Ala
465 470

<210> 64
<211> 377
<212> PRT
<213> Homo sapiens

<400> 64

Met Leu Ser Val Pro His Gly Ile Ala Asn Glu Asp Ile Val Ser Gln
1 5 10 15

Asn Pro Gly Glu Leu Ser Cys Lys Arg Gly Asp Val Leu Val Met Leu
20 25 30

Lys Gln Thr Glu Asn Asn Tyr Leu Glu Cys Gln Lys Gly Glu Asp Thr
35 40 45

Gly Arg Val His Leu Ser Gln Met Lys Ile Ile Thr Pro Leu Asp Glu
50 55 60

His Leu Arg Ser Arg Pro Asn Asp Pro Ser His Ala Gln Lys Pro Val
65 70 75 80

Asp Ser Gly Ala Pro His Ala Val Val Leu His Asp Phe Pro Ala Glu
85 90 95

Gln Val Asp Asp Leu Asn Leu Thr Ser Gly Glu Ile Val Tyr Leu Leu
100 105 110

Glu Lys Ile Asp Thr Asp Trp Tyr Arg Gly Asn Cys Arg Asn Gln Ile
115 120 125

Gly Ile Phe Pro Ala Asn Tyr Val Lys Val Ile Ile Asp Ile Pro Glu
130 135 140

Gly Gly Asn Gly Lys Arg Glu Cys Val Ser Ser His Cys Val Lys Gly
145 150 155 160

Ser Arg Cys Val Ala Arg Phe Glu Tyr Ile Gly Glu Gln Lys Asp Glu
165 170 175

Leu Ser Phe Ser Glu Gly Glu Ile Ile Ile Leu Lys Glu Tyr Val Asn
180 185 190

Glu Glu Trp Ala Arg Gly Glu Val Arg Gly Arg Thr Gly Ile Phe Pro
195 200 205

Leu Asn Phe Val Glu Pro Val Glu Asp Tyr Pro Thr Ser Gly Ala Asn
210 215 220

Val Leu Ser Thr Lys Val Pro Leu Lys Thr Lys Lys Glu Asp Ser Gly
225 230 235 240

Ser Asn Ser Gln Val Asn Ser Leu Pro Ala Glu Trp Cys Glu Ala Leu
245 250 255

His Ser Phe Thr Ala Glu Thr Ser Asp Asp Leu Ser Phe Lys Arg Gly
260 265 270

Asp Arg Ile Gln Ile Leu Glu Arg Leu Asp Ser Asp Trp Cys Arg Gly
275 280 285

Arg Leu Gln Asp Arg Glu Gly Ile Phe Pro Ala Val Phe Val Arg Pro
290 295 300

Cys Pro Ala Glu Ala Lys Ser Met Leu Ala Ile Val Pro Lys Gly Arg
305 310 315 320

Lys Ala Lys Ala Leu Tyr Asp Phe Arg Gly Glu Asn Glu Asp Glu Leu
325 330 335

Ser Phe Lys Ala Gly Asp Ile Ile Thr Glu Leu Glu Ser Val Asp Asp
340 345 350

Asp Trp Met Ser Gly Glu Leu Met Gly Lys Ser Gly Ile Phe Pro Lys
355 360 365

Asn Tyr Ile Gln Phe Leu Gln Ile Ser
370 375

<210> 65
<211> 949
<212> PRT
<213> Homo sapiens

<400> 65

Met Asp Ile Ser Thr Arg Ser Lys Asp Pro Gly Ser Ala Glu Arg Thr
1 5 10 15

Ala Gln Lys Arg Lys Phe Pro Ser Pro Pro His Ser Ser Asn Gly His
20 25 30

Ser Pro Gln Asp Thr Ser Thr Ser Pro Ile Lys Lys Lys Lys Pro
35 40 45

Gly Leu Leu Asn Ser Asn Asn Lys Glu Gln Ser Glu Leu Arg His Gly
50 55 60

Pro Phe Tyr Tyr Met Lys Gln Pro Leu Thr Thr Asp Pro Val Asp Val
65 70 75 80

Val Pro Gln Asp Gly Arg Asn Asp Phe Tyr Cys Trp Val Cys His Arg
85 90 95

Glu Gly Gln Val Leu Cys Cys Glu Leu Cys Pro Arg Val Tyr His Ala
100 105 110

Lys Cys Leu Arg Ile Thr Ser Glu Pro Glu Gly Asp Trp Phe Cys Pro
115 120 125

Glu Cys Glu Lys Ile Thr Val Ala Glu Cys Ile Glu Thr Gln Ser Lys
130 135 140

Ala Met Thr Met Leu Thr Ile Glu Gln Leu Ser Tyr Leu Leu Lys Phe
145 150 155 160

Ala Ile Gln Lys Met Lys Gln Pro Gly Thr Asp Ala Phe Gln Lys Pro
165 170 175

Val Pro Leu Glu Gln His Pro Asp Tyr Ala Glu Tyr Ile Phe His Pro
180 185 190

Met Asp Leu Cys Thr Leu Glu Lys Asn Ala Lys Lys Lys Met Tyr Gly
195 200 205

Cys Thr Glu Ala Phe Leu Ala Asp Ala Lys Trp Ile Leu His Asn Cys
210 215 220

Ile Ile Tyr Asn Gly Gly Asn His Lys Leu Thr Gln Ile Ala Lys Val
225 230 235 240

Val Ile Lys Ile Cys Glu His Glu Met Asn Glu Ile Glu Val Cys Pro
245 250 255

Glu Cys Tyr Leu Ala Ala Cys Gln Lys Arg Asp Asn Trp Phe Cys Glu
260 265 270

Pro Cys Ser Asn Pro His Pro Leu Val Trp Ala Lys Leu Lys Gly Phe
275 280 285

Pro Phe Trp Pro Ala Lys Ala Leu Arg Asp Lys Asp Gly Gln Val Asp
290 295 300

Ala Arg Phe Phe Gly Gln His Asp Arg Ala Trp Val Pro Ile Asn Asn
305 310 315 320

Cys Tyr Leu Met Ser Lys Glu Ile Pro Phe Ser Val Lys Lys Thr Lys
325 330 335

Ser Ile Phe Asn Ser Ala Met Gln Glu Met Glu Val Tyr Val Glu Asn
340 345 350

Ile Arg Arg Lys Phe Gly Val Phe Asn Tyr Ser Pro Phe Arg Thr Pro
355 360 365

Tyr Thr Phe Asn Ser Gln Tyr Gln Met Leu Leu Asp Pro Thr Asn Pro
370 375 380

Ser Ala Gly Thr Ala Lys Ile Asp Lys Gln Glu Lys Val Lys Leu Asn
385 390 395 400

Phe Asp Met Thr Ala Ser Pro Lys Ile Leu Met Ser Lys Pro Val Leu
405 410 415

Ser Gly Gly Thr Gly Arg Arg Ile Ser Leu Ser Asp Met Pro Arg Ser
420 425 430

Pro Met Ser Thr Asn Ser Ser Val His Thr Gly Ser Asp Val Glu Gln
435 440 445

Asp Ala Glu Lys Lys Ala Thr Ser Ser His Phe Ser Ala Ser Glu Glu
450 455 460

Ser Met Asp Phe Leu Asp Lys Ser Thr Ala Ser Pro Ala Ser Thr Lys
465 470 475 480

Thr Gly Gln Ala Gly Ser Leu Ser Gly Ser Pro Lys Pro Phe Ser Pro
485 490 495

Gln Leu Ser Ala Pro Ile Thr Thr Lys Thr Asp Lys Thr Ser Thr Thr
500 505 510

Gly Ser Ile Leu Asn Leu Asn Leu Asp Arg Ser Lys Ala Glu Met Asp
515 520 525

Leu Lys Glu Leu Ser Glu Ser Val Gln Gln Gln Ser Thr Pro Val Pro
530 535 540

Leu Ile Ser Pro Lys Arg Gln Ile Arg Ser Arg Phe Gln Leu Asn Leu
545 550 555 560

Asp Lys Thr Ile Glu Ser Cys Lys Ala Gln Leu Gly Ile Asn Glu Ile
565 570 575

Ser Glu Asp Val Tyr Thr Ala Val Glu His Ser Asp Ser Glu Asp Ser
580 585 590

Glu Lys Ser Asp Ser Ser Asp Ser Glu Tyr Ile Ser Asp Asp Glu Gln
595 600 605

Lys Ser Lys Asn Glu Pro Glu Asp Thr Glu Asp Lys Glu Gly Cys Gln
610 615 620

Met Asp Lys Glu Pro Ser Ala Val Lys Lys Lys Pro Lys Pro Thr Asn
621 630 635 640

Pro Val Glu Ile Lys Glu Glu Leu Lys Ser Thr Ser Pro Ala Ser Glu
645 650 655

Lys Ala Asp Pro Gly Ala Val Lys Asp Lys Ala Ser Pro Glu Pro Glu
660 665 670

Lys Asp Phe Ser Glu Lys Ala Lys Pro Ser Pro His Pro Ile Lys Asp
675 680 685

Lys Leu Lys Gly Lys Asp Glu Thr Asp Ser Pro Thr Val His Leu Gly
690 695 700

Leu Asp Ser Asp Ser Glu Ser Glu Leu Val Ile Asp Leu Gly Glu Asp
705 710 715 720

His Ser Gly Arg Glu Gly Arg Lys Asn Lys Lys Glu Pro Lys Glu Pro
725 730 735

Ser Pro Lys Gln Asp Val Val Gly Lys Thr Pro Pro Ser Thr Thr Val
740 745 750

Gly Ser His Ser Pro Pro Glu Thr Pro Val Leu Thr Arg Ser Ser Ala
755 760 765

Gln Thr Ser Ala Ala Gly Ala Thr Ala Thr Thr Ser Thr Ser Ser Thr
770 775 780

Val Thr Val Thr Ala Pro Ala Pro Ala Ala Thr Gly Ser Pro Val Lys
785 790 795 800

Lys Gln Arg Pro Leu Leu Pro Lys Glu Thr Ala Pro Ala Val Gln Arg
805 810 815

Val Val Trp Asn Ser Ser Ser Lys Phe Gln Thr Ser Ser Gln Lys Trp
820 825 830

His Met Gln Lys Met Gln Arg Gln Gln Gln Gln Gln Gln Gln Asn
835 840 845

Gln Gln Gln Gln Pro Gln Ser Ser Gln Gly Thr Arg Tyr Gln Thr Arg
850 855 860

Gln Ala Val Lys Ala Val Gln Gln Lys Glu Ile Thr Gln Ser Pro Ser
865 870 875 880

Thr Ser Thr Ile Thr Leu Val Thr Ser Thr Gln Ser Ser Pro Leu Val
885 890 895

Thr Ser Ser Gly Ser Met Ser Thr Leu Val Ser Ser Val Asn Ala Asp
900 905 910

Leu Pro Ile Ala Thr Ala Ser Ala Asp Val Ala Ala Asp Ile Ala Lys
915 920 925

Tyr Thr Ser Lys Val Asn Gly Cys Asn Lys Arg Asn Asn Asp Arg Asn
930 935 940

Ile Gln Arg Ser Phe
945

<210> 66
<211> 380
<212> PRT
<213> Homo sapiens

<400> 66

Met Asp Ser Gly Cys Trp Leu Phe Gly Gly Glu Phe Glu Asp Ser Val
1 5 10 15

Phe Glu Glu Arg Pro Glu Arg Arg Ser Gly Pro Pro Ala Ser Tyr Cys
20 25 30

Ala Lys Leu Cys Glu Pro Gln Trp Phe Tyr Glu Glu Thr Glu Ser Ser
35 40 45

Asp Asp Val Glu Val Leu Thr Leu Lys Lys Phe Lys Gly Asp Leu Ala
50 55 60

Tyr Arg Arg Gln Glu Tyr Gln Lys Ala Leu Gln Glu Tyr Ser Ser Ile
65 70 75 80

Ser Glu Lys Leu Ser Ser Thr Asn Phe Ala Met Lys Arg Asp Val Gln
85 90 95

Glu Gly Gln Ala Arg Cys Leu Ala His Leu Gly Arg His Met Glu Ala
100 105 110

Leu Glu Ile Ala Ala Asn Leu Glu Asn Lys Ala Thr Asn Thr Asp His
115 120 125

Leu Thr Thr Val Leu Tyr Leu Gln Leu Ala Ile Cys Ser Ser Leu Gln
130 135 140

Asn Leu Glu Lys Thr Ile Phe Cys Leu Gln Lys Leu Ile Ser Leu His

145 150 155 160

Pro Phe Asn Pro Trp Asn Trp Gly Lys Leu Ala Glu Ala Tyr Leu Asn
165 170 175

Leu Gly Pro Ala Leu Ser Ala Ala Leu Ala Ser Ser Gln Lys Gln His
180 185 190

Ser Phe Thr Ser Ser Asp Lys Thr Ile Lys Ser Phe Phe Pro His Ser
195 200 205

Gly Lys Asp Cys Leu Leu Cys Phe Pro Glu Thr Leu Pro Glu Ser Ser
210 215 220

Leu Phe Ser Val Glu Ala Asn Ser Ser Asn Ser Gln Lys Asn Glu Lys
225 230 235 240

Ala Leu Thr Asn Ile Gln Asn Cys Met Ala Glu Lys Arg Glu Thr Val
245 250 255

Leu Ile Glu Thr Gln Leu Lys Ala Cys Ala Ser Phe Ile Arg Thr Arg
260 265 270

Leu Leu Leu Gln Phe Thr Gln Pro Gln Gln Thr Ser Phe Ala Leu Glu
275 280 285

Arg Asn Leu Arg Thr Gln Gln Glu Ile Glu Asp Lys Met Lys Gly Phe
290 295 300

Ser Phe Lys Glu Asp Thr Leu Leu Leu Ile Ala Glu Val Met Gly Glu
305 310 315 320

Asp Ile Pro Glu Lys Ile Lys Asp Glu Val His Pro Glu Val Lys Cys
325 330 335

Val Gly Ser Val Ala Leu Thr Ala Leu Val Thr Val Ser Ser Glu Glu
340 345 350

Phe Glu Asp Lys Trp Phe Arg Lys Ile Lys Asp His Phe Cys Pro Phe
355 360 365

Glu Asn Gln Phe His Thr Glu Ile Gln Ile Leu Ala
370 375 380

<210> 67
<211> 518
<212> PRT
<213> Homo sapiens

<400> 67

Met Lys Ser Arg Phe Ser Thr Ile Asp Leu Arg Ala Val Leu Ala Glu
1 5 10 15

Ieu Asn Ala Ser Ieu Leu Gly Met Arg Val Asn Asn Val Tyr Asp Val
20 25 30

Asp Asn Lys Thr Tyr Leu Ile Arg Leu Gln Lys Pro Asp Phe Lys Ala
35 40 45

Thr Leu Leu Leu Glu Ser Gly Ile Arg Ile His Thr Thr Glu Phe Glu
50 55 60

Trp Pro Lys Asn Met Met Pro Ser Ser Phe Ala Met Lys Cys Arg Lys
65 70 75 80

His Leu Lys Ser Arg Arg Leu Val Ser Ala Lys Gln Leu Gly Val Asp
85 90 95

Arg Ile Val Asp Phe Gln Phe Gly Ser Asp Glu Ala Ala Tyr His Leu
100 105 110

Ile Ile Glu Leu Tyr Asp Arg Gly Asn Ile Val Leu Thr Asp Tyr Glu
115 120 125

Tyr Val Ile Leu Asn Ile Leu Arg Phe Arg Thr Asp Glu Ala Asp Asp
130 135 140

Val Lys Phe Ala Val Arg Glu Arg Tyr Pro Leu Asp His Ala Arg Ala
145 150 155 160

Ala Glu Pro Leu Leu Thr Leu Glu Arg Leu Thr Glu Ile Val Ala Ser
165 170 175

Ala Pro Lys Gly Glu Leu Leu Lys Arg Val Leu Asn Pro Leu Leu Pro
180 185 190

Tyr Gly Pro Ala Leu Ile Glu His Cys Leu Leu Glu Asn Gly Phe Ser
195 200 205

Gly Asn Val Lys Val Asp Glu Lys Leu Glu Thr Lys Asp Ile Glu Lys
210 215 220

Val Leu Val Ser Leu Gln Lys Ala Glu Asp Tyr Met Lys Thr Thr Ser
225 230 235 240

Asn Phe Ser Gly Lys Gly Tyr Ile Ile Gln Lys Arg Glu Ile Lys Pro
245 250 255

Cys Leu Glu Ala Asp Lys Pro Val Glu Asp Ile Leu Thr Tyr Glu Glu
260 265 270

Phe His Pro Phe Leu Phe Ser Gln His Ser Gln Cys Pro Tyr Ile Glu
275 280 285

Phe Glu Ser Phe Asp Lys Ala Val Asp Glu Phe Tyr Ser Lys Ile Glu
290 295 300

Gly Gln Lys Ile Asp Leu Lys Ala Leu Gln Gln Glu Lys Gln Ala Leu
305 310 315 320

Lys Lys Leu Asp Asn Val Arg Lys Asp His Glu Asn Arg Leu Glu Ala
325 330 335

Leu Gln Gln Ala Gln Glu Ile Asp Lys Leu Lys Gly Glu Leu Ile Glu
340 345 350

Met Asn Leu Gln Ile Val Asp Arg Ala Ile Gln Val Val Arg Ser Ala
355 360 365

Leu Ala Asn Gln Ile Asp Trp Thr Glu Ile Gly Leu Ile Val Lys Glu
370 375 380

Ala Gln Ala Gln Gly Asp Pro Val Ala Ser Ala Ile Lys Glu Leu Lys
385 390 395 400

Leu Gln Thr Asn His Val Thr Met Leu Leu Arg Asn Pro Tyr Leu Leu
405 410 415

Ser Glu Glu Glu Asp Asp Val Asp Gly Asp Val Asn Val Glu Lys
420 425 430

Asn Glu Thr Glu Pro Pro Lys Gly Lys Lys Lys Gln Lys Asn Lys
435 440 445

Gln Leu Gln Lys Pro Gln Lys Asn Lys Pro Leu Leu Val Asp Val Asp
450 455 460

Leu Ser Leu Ser Ala Tyr Ala Asn Ala Lys Lys Tyr Tyr Asp His Lys
465 470 475 480

Arg Tyr Ala Ala Lys Lys Thr Gln Lys Thr Val Glu Ala Ala Glu Lys
485 490 495

Ala Phe Lys Ser Ala Glu Lys Lys Thr Lys Gln Thr Leu Lys Glu Val
500 505 510

Gln Thr Val Thr Ser Ile
515

<210> 68
<211> 362
<212> PRT
<213> Homo sapiens

<400> 68

Met Thr Gln Val Asp Gln Glu Asp Ile Thr Leu Gln Ser Gly Arg Asp
1 5 10 15

Glu Leu Asn Glu Glu Leu Ile Gln Glu Ser Ser Glu Asp Glu Gly
20 25 30

Glu Tyr Glu Glu Val Arg Lys Asp Gln Asp Ser Val Gly Glu Met Lys
35 40 45

Asp Glu Gly Glu Glu Thr Leu Asn Tyr Pro Asp Thr Thr Ile Asp Leu
50 55 60

Ser His Leu Gln Pro Gln Arg Ser Ile Gln Lys Leu Ala Ser Lys Glu
65 70 75 80

Glu Ser Ser Asn Ser Ser Asp Ser Lys Ser Gln Ser Arg Arg His Leu
85 90 95

Ser Ala Lys Glu Arg Arg Glu Met Lys Lys Lys Lys Leu Pro Ser Asp
100 105 110

Ser Gly Asp Leu Glu Ala Leu Glu Gly Lys Asp Lys Glu Lys Glu Ser
115 120 125

Thr Val His Ile Glu Thr His Gln Asn Thr Ser Lys Asn Val Ala Ala
130 135 140

Val Gln Pro Met Lys Arg Gly Gln Lys Ser Lys Met Lys Lys Met Lys
145 150 155 160

Glu Lys Tyr Lys Asp Gln Asp Glu Glu Asp Arg Glu Leu Ile Met Lys
165 170 175

Leu Leu Gly Ser Ala Gly Ser Asn Lys Glu Glu Lys Gly Lys Lys Gly
180 185 190

Lys Lys Gly Lys Thr Lys Asp Glu Pro Val Lys Lys Gln Pro Gln Lys
195 200 205

Phe Arg Gly Gly Gln Arg Val Ser Asp Asn Ile Lys Lys Glu Thr Pro
218 215 220

Phe Leu Glu Val Ile Thr His Glu Leu Gln Asp Phe Ala Val Asp Asp
225 230 235 240

Pro His Asp Asp Lys Glu Glu Gln Asp Leu Asp Gln Gln Gly Asn Glu
245 250 255

Glu Asn Leu Phe Asp Ser Leu Thr Gly Gln Pro His Pro Glu Asp Val
260 265 270

Leu Leu Phe Ala Ile Pro Ile Cys Ala Pro Tyr Thr Thr Met Thr Asn
275 280 285

Tyr Lys Tyr Lys Val Lys Leu Thr Pro Gly Val Gln Lys Lys Gly Lys
290 295 300

Ala Ala Lys Thr Ala Leu Asn Ser Phe Met His Ser Lys Glu Ala Thr
305 310 315 320

Ala Arg Glu Lys Asp Leu Phe Arg Ser Val Lys Asp Thr Asp Leu Ser
325 330 335

Arg Asn Ile Pro Gly Lys Val Lys Ser Val Cys Thr Gln Ser Ser Glu
340 345 350

Arg Lys Lys Glu Ile Ala Glu Met Lys Phe
355 360

<210> 69
<211> 634
<212> PRT
<213> Homo sapiens

<400> 69

Met Glu Ser Gly Arg Gly Ser Ser Thr Pro Pro Gly Pro Ile Ala Ala
1 5 10 15

Leu Gly Met Pro Asp Thr Gly Pro Gly Ser Ser Ser Leu Gly Lys Leu
20 25 30

Gln Ala Leu Pro Val Gly Pro Arg Ala His Cys Gly Asp Pro Val Ser
35 40 45

Leu Ala Ala Ala Gly Asp Gly Ser Pro Asp Ile Gly Pro Thr Gly Glu
50 55 60

Leu Ser Gly Ser Leu Lys Ile Pro Asn Arg Asp Ser Gly Ile Asp Ser
65 70 75 80

Pro Ser Ser Ser Val Ala Gly Glu Asn Phe Pro Cys Glu Glu Gly Leu
85 90 95

Glu Ala Gly Pro Ser Pro Thr Val Leu Gly Ala His Ala Glu Met Ala
100 105 110

Leu Asp Ser Gln Val Pro Lys Val Thr Pro Gln Glu Glu Ala Asp Ser
115 120 125

Asp Val Gly Glu Glu Pro Asp Ser Glu Asn Thr Pro Gln Lys Ala Asp
130 135 140

Lys Asp Ala Gly Leu Ala Gln His Ser Gly Pro Gln Lys Leu Leu His
145 150 155 160

Ile Ala Gln Glu Leu Leu His Thr Glu Glu Thr Tyr Val Lys Arg Leu
165 170 175

His Leu Leu Asp Gln Val Phe Cys Thr Arg Leu Thr Asp Ala Gly Ile
180 185 190

Pro Pro Glu Val Ile Met Gly Ile Phe Ser Asn Ile Ser Ser Ile His
195 200 205

Arg Phe His Gly Gln Phe Leu Leu Pro Glu Leu Lys Thr Arg Ile Thr
210 215 220

Glu Glu Trp Asp Thr Asn Pro Arg Leu Gly Asp Ile Leu Gln Lys Leu
225 230 235 240

Ala Pro Phe Leu Lys Met Tyr Gly Glu Tyr Val Lys Asn Phe Asp Arg
245 250 255

Ala Val Gly Leu Val Ser Thr Trp Thr Gln Arg Ser Pro Leu Phe Lys
260 265 270

Asp Val Val His Ser Ile Gln Lys Gln Glu Val Cys Gly Asn Leu Thr
275 280 285

Leu Gln His His Met Leu Glu Pro Val Gln Arg Val Pro Arg Tyr Glu
290 295 300

Leu Leu Leu Lys Asp Tyr Leu Lys Arg Leu Pro Gln Asp Ala Pro Asp
305 310 315 320

Arg Lys Asp Ala Glu Arg Ser Leu Glu Leu Ile Ser Thr Ala Ala Asn
325 330 335

His Ser Asn Ala Ala Ile Arg Lys Val Glu Lys Met His Lys Leu Leu
340 345 350

Glu Val Tyr Glu Gln Leu Gly Gly Glu Glu Asp Ile Val Asn Pro Ala
355 360 365

Asn Glu Leu Ile Lys Glu Gly Gln Ile Gln Lys Leu Ser Ala Lys Asn
370 375 380

Gly Thr Pro Gln Asp Arg His Leu Phe Leu Phe Asn Ser Met Ile Leu
385 390 395 400

Tyr Cys Val Pro Lys Leu Arg Leu Met Gly Gln Lys Phe Ser Val Arg
405 410 415

Glu Lys Met Asp Ile Ser Gly Leu Gln Val Gln Asp Ile Val Lys Pro
420 425 430

Asn Thr Ala His Thr Phe Ile Ile Thr Gly Arg Lys Arg Ser Leu Glu
435 440 445

Leu Gln Thr Arg Thr Glu Glu Lys Lys Glu Trp Ile Gln Ile Ile
450 455 460

Gln Ala Thr Ile Glu Lys His Lys Gln Asn Ser Glu Thr Phe Lys Ala
465 470 475 480

Phe Gly Gly Ala Phe Ser Gln Asp Glu Asp Pro Ser Leu Ser Pro Asp
485 490 495

Met Pro Ile Thr Ser Thr Ser Pro Val Glu Pro Val Val Thr Thr Glu
500 505 510

Gly Ser Ser Gly Ala Ala Gly Leu Glu Pro Arg Lys Leu Ser Ser Lys
515 520 525

Thr Arg Arg Asp Lys Glu Lys Gln Ser Cys Lys Ser Cys Gly Glu Thr
530 535 540

Phe Asn Ser Ile Thr Lys Arg Arg His His Cys Lys Leu Cys Gly Ala
545 550 555 560

Val Ile Cys Gly Lys Cys Ser Glu Phe Lys Ala Glu Asn Ser Arg Gln
565 570 575

Ser Arg Val Cys Arg Asp Cys Phe Leu Thr Gln Pro Val Ala Pro Glu
580 585 590

Ser Thr Glu Val Gly Ala Pro Ser Ser Cys Ser Pro Pro Gly Gly Ala
595 600 605

Ala Glu Pro Pro Asp Thr Cys Ser Cys Ala Pro Ala Ala Pro Ala Ala
610 615 620

Ser Ala Phe Gly Val Ser Leu Gly Pro Gly
625 630

<210> 70
<211> 284
<212> PRT
<213> Homo sapiens

<400> 70

Met Asp Ala Ile Lys Lys Lys Met Gln Met Leu Lys Leu Asp Lys Glu
1 5 10 15

Asn Ala Leu Asp Arg Ala Glu Gln Ala Glu Ala Asp Lys Lys Ala Ala
20 25 30

Glu Asp Arg Ser Lys Gln Leu Glu Asp Glu Leu Val Ser Leu Gln Lys
35 40 45

Lys Leu Lys Gly Thr Glu Asp Glu Leu Asp Lys Tyr Ser Glu Ala Leu
50 55 60

Lys Asp Ala Gln Glu Lys Leu Glu Leu Ala Glu Lys Lys Ala Thr Asp
65 70 75 80

Ala Glu Ala Asp Val Ala Ser Leu Asn Arg Arg Ile Gln Leu Val Glu
85 90 95

Glu Glu Leu Asp Arg Ala Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys
100 105 110

Leu Glu Glu Ala Glu Lys Ala Ala Asp Glu Ser Glu Arg Gly Met Lys
115 120 125

Val Ile Glu Ser Arg Ala Gln Lys Asp Glu Glu Lys Met Glu Ile Gln
130 135 140

Glu Ile Gln Leu Lys Glu Ala Lys His Ile Ala Glu Asp Ala Asp Arg
145 150 155 160

Lys Tyr Glu Glu Val Ala Arg Lys Leu Val Ile Ile Glu Ser Asp Leu

165

170

175

Glu Arg Ala Glu Glu Arg Ala Glu Leu Ser Glu Gly Gln Val Arg Gln
180 185 190

Leu Glu Glu Gln Leu Arg Ile Met Asp Gln Thr Leu Lys Ala Leu Met
195 200 205

Ala Ala Glu Asp Lys Tyr Ser Gln Lys Glu Asp Arg Tyr Glu Glu Glu
210 215 220

Ile Lys Val Leu Ser Asp Lys Leu Lys Glu Ala Glu Thr Arg Ala Glu
225 230 235 240

Phe Ala Glu Arg Ser Val Thr Lys Leu Glu Lys Ser Ile Asp Asp Leu
245 250 255

Glu Glu Lys Val Ala His Ala Lys Glu Glu Asn Leu Ser Met His Gln
260 265 270

Met Leu Asp Gln Thr Leu Leu Glu Leu Asn Asn Met
275 280

<210> 71

<211> 683

<212> PRT

<213> Homo sapiens

<400> 71

Met Thr Ala Val His Gly Arg Phe Thr Arg Ser Gln Thr Leu Ile Gln
1 5 10 15

Asn Gly Gly Glu Ile Asp Cys Val Asp Lys Asp Gly Asn Thr Pro Leu
20 25 30

His Val Ala Ala Arg Tyr Gly His Glu Leu Leu Ile Asn Thr Leu Ile
35 40 45

Thr Ser Gly Ala Asp Thr Ala Lys Cys Gly Ile His Ser Met Phe Pro
50 55 60

Leu His Leu Ala Ala Leu Asn Ala His Ser Asp Cys Cys Arg Lys Leu
65 70 75 80

Leu Ser Ser Gly Gln Lys Tyr Ser Ile Val Ser Leu Phe Ser Asn Glu
85 90 95

His Val Leu Ser Ala Gly Phe Glu Ile Asp Thr Pro Asp Lys Phe Gly
100 105 110

Arg Thr Cys Leu His Ala Ala Ala Gly Gly Asn Val Glu Cys Ile
115 120 125

Lys Leu Leu Gln Ser Ser Gly Ala Asp Phe His Lys Lys Asp Lys Cys
130 135 140

Gly Arg Thr Pro Leu His Tyr Ala Ala Asn Cys His Phe His Cys
145 150 155 160

Ile Glu Thr Leu Val Thr Thr Gly Ala Asn Val Asn Glu Thr Asp Asp
165 170 175

Trp Gly Arg Thr Ala Leu His Tyr Ala Ala Ser Asp Met Asp Arg
180 185 190

Asn Lys Thr Ile Leu Gly Asn Ala His Asp Asn Ser Glu Glu Leu Glu
195 200 205

Arg Ala Arg Glu Leu Lys Glu Lys Glu Ala Thr Leu Cys Leu Glu Phe
210 215 220

Leu Leu Gln Asn Asp Ala Asn Pro Ser Ile Arg Asp Lys Glu Gly Tyr
225 230 235 240

Asn Ser Ile His Tyr Ala Ala Ala Tyr Gly His Arg Gln Cys Leu Glu
245 250 255

Leu Leu Leu Glu Arg Thr Asn Ser Gly Phe Glu Glu Ser Asp Ser Gly
260 265 270

Ala Thr Lys Ser Pro Leu His Leu Ala Ala Tyr Asn Gly His His Gln
275 280 285

Ala Leu Glu Val Leu Leu Gln Ser Leu Val Asp Leu Asp Ile Arg Asp
290 295 300

Glu Lys Gly Arg Thr Ala Leu Asp Leu Ala Ala Phe Lys Gly His Thr
305 310 315 320

Glu Cys Val Glu Ala Leu Ile Asn Gln Gly Ala Ser Ile Phe Val Lys
325 330 335

Asp Asn Val Thr Lys Arg Thr Pro Leu His Ala Ser Val Ile Asn Gly
340 345 350

His Thr Leu Cys Leu Arg Leu Leu Leu Glu Ile Ala Asp Asn Pro Glu
355 360 365

Ala Val Asp Val Lys Asp Ala Lys Gly Gln Thr Pro Leu Met Leu Ala
370 375 380

Val Ala Tyr Gly His Ile Asp Ala Val Ser Leu Leu Leu Glu Lys Glu
385 390 395 400

Ala Asn Val Asp Thr Val Asp Ile Leu Gly Cys Thr Ala Leu His Arg
405 410 415

Gly Ile Met Thr Gly His Glu Glu Cys Val Gln Met Leu Leu Glu Gln
420 425 430

Glu Val Ser Ile Leu Cys Lys Asp Ser Arg Gly Arg Thr Pro Leu His
435 440 445

Tyr Ala Ala Ala Arg Gly His Ala Thr Trp Leu Ser Glu Leu Leu Gln
450 455 460

Met Ala Leu Ser Glu Glu Asp Cys Cys Phe Lys Asp Asn Gln Gly Tyr
465 470 475 480

Thr Pro Leu His Trp Ala Cys Tyr Asn Gly Asn Glu Asn Cys Ile Glu
485 490 495

Val Leu Leu Glu Gln Lys Cys Phe Arg Lys Phe Ile Gly Asn Pro Phe
500 505 510

Thr Pro Leu His Cys Ala Ile Ile Asn Asp His Gly Asn Cys Ala Ser
515 520 525

Leu Leu Leu Gly Ala Ile Asp Ser Ser Ile Val Ser Cys Arg Asp Asp
530 535 540

Lys Gly Arg Thr Pro Leu His Ala Ala Ala Phe Ala Asp His Val Glu
545 550 555 560

Cys Leu Gln Leu Leu Leu Arg His Ser Ala Pro Val Asn Ala Val Asp
565 570 575

Asn Ser Gly Lys Thr Ala Leu Met Met Ala Ala Glu Asn Gly Gln Ala
580 585 590

Gly Ala Val Asp Ile Leu Val Asn Ser Ala Gln Ala Asp Leu Thr Val
595 600 605

Lys Asp Lys Asp Leu Asn Thr Pro Leu His Leu Ala Cys Ser Lys Gly
610 615 620

His Glu Lys Cys Ala Leu Leu Ile Leu Asp Lys Ile Gln Asp Glu Ser
625 630 635 640

Leu Ile Asn Glu Lys Asn Asn Ala Leu Gln Thr Pro Leu His Val Ala
645 650 655

Ala Arg Asn Gly Leu Lys Val Val Val Glu Glu Leu Leu Ala Lys Gly
660 665 670

Ala Cys Val Leu Ala Val Asp Glu Asn Gly Cys
675 680

<210> 72
<211> 547
<212> PRT
<213> Homo sapiens

<400> 72

Met Ala Ala Val Ser Leu Arg Leu Gly Asp Leu Val Trp Gly Lys Leu
1 5 10 15

Gly Arg Tyr Pro Pro Trp Pro Gly Lys Ile Val Asn Pro Pro Lys Asp
20 25 30

Leu Lys Lys Pro Arg Gly Lys Lys Cys Phe Phe Val Lys Phe Phe Gly
35 40 45

Thr Glu Asp His Ala Trp Ile Lys Val Glu Gln Leu Lys Pro Tyr His
50 55 60

Ala His Lys Glu Glu Met Ile Lys Ile Asn Lys Gly Lys Arg Phe Gln
65 70 75 80

Gln Ala Val Asp Ala Val Glu Glu Phe Leu Arg Arg Ala Lys Gly Lys
85 90 95

Asp Gln Thr Ser Ser His Asn Ser Ser Asp Asp Lys Asn Arg Arg Asn
100 105 110

Ser Ser Glu Glu Arg Ser Arg Pro Asn Ser Gly Asp Glu Lys Arg Lys
115 120 125

Leu Ser Leu Ser Glu Gly Lys Val Lys Lys Asn Met Gly Glu Gly Lys
130 135 140

Lys Arg Val Ser Ser Gly Ser Ser Glu Arg Gly Ser Lys Ser Pro Leu
145 150 155 160

Lys Arg Ala Gln Glu Gln Ser Pro Arg Lys Arg Gly Arg Pro Pro Lys
165 170 175

Asp Glu Lys Asp Leu Thr Ile Pro Glu Ser Ser Thr Val Lys Gly Met
180 185 190

Met Ala Gly Pro Met Ala Ala Phe Lys Trp Gln Pro Thr Ala Ser Glu
195 200 205

Pro Val Lys Asp Ala Asp Pro His Phe His His Phe Leu Leu Ser Gln
210 215 220

Thr Glu Lys Pro Ala Val Cys Tyr Gln Ala Ile Thr Lys Lys Leu Lys
225 230 235 240

Ile Cys Glu Glu Glu Thr Gly Ser Thr Ser Ile Gln Ala Ala Asp Ser
245 250 255

Thr Ala Val Asn Gly Ser Ile Thr Pro Thr Asp Lys Lys Ile Gly Phe
260 265 270

Leu Gly Leu Gly Leu Met Gly Ser Gly Ile Val Ser Asn Leu Leu Lys
275 280 285

Met Gly His Thr Val Thr Val Trp Asn Arg Thr Ala Glu Lys Glu Gly
290 295 300

Ala Arg Leu Gly Arg Thr Pro Ala Glu Val Val Ser Thr Cys Asp Ile
305 310 315 320

Thr Phe Ala Cys Val Ser Asp Pro Lys Ala Ala Lys Asp Leu Val Leu
325 330 335

Gly Pro Ser Gly Val Leu Gln Gly Ile Arg Pro Gly Lys Cys Tyr Val
340 345 350

Asp Met Ser Thr Val Asp Ala Asp Thr Val Thr Glu Leu Ala Gln Val
355 360 365

Ile Val Ser Arg Gly Gly Arg Phe Leu Glu Ala Pro Val Ser Gly Asn
370 375 380

Gln Gln Leu Ser Asn Asp Gly Met Leu Val Ile Leu Ala Ala Gly Asp
385 390 395 400

Arg Gly Leu Tyr Glu Asp Cys Ser Ser Cys Phe Gln Ala Met Gly Lys
405 410 415

Thr Ser Phe Phe Leu Gly Glu Val Gly Asn Ala Ala Lys Met Met Leu
420 425 430

Ile Val Asn Met Val Gln Gly Ser Phe Met Ala Thr Ile Ala Glu Gly
435 440 445

Leu Thr Leu Ala Gln Val Thr Gly Gln Ser Gln Gln Thr Leu Leu Asp
450 455 460

Ile Leu Asn Gln Gly Gln Leu Ala Ser Ile Phe Leu Asp Gln Lys Cys
465 470 475 480

Gln Asn Ile Leu Gln Gly Asn Phe Lys Pro Asp Phe Tyr Leu Lys Tyr
485 490 495

Ile Gln Lys Asp Leu Arg Leu Ala Ile Ala Leu Gly Asp Ala Val Asn
500 505 510

His Pro Thr Pro Met Ala Ala Ala Asn Glu Val Tyr Lys Arg Ala
515 520 525

Lys Ala Leu Asp Gln Ser Asp Asn Asp Met Ser Ala Val Tyr Arg Ala
530 535 540

Tyr Ile His
545

<210> 73
<211> 638
<212> PRT
<213> Homo sapiens

<400> 73

Met Ser Leu Gly Gln Ser Ala Cys Leu Phe Leu Ser Ile Ala Arg Ser
1 5 10 15

Arg Ser Val Met Thr Gly Glu Gln Met Ala Ala Phe His Pro Ser Ser
20 25 30

Thr Pro Asn Pro Leu Glu Arg Pro Ile Lys Met Gly Trp Leu Lys Lys
35 40 45

Gln Arg Ser Ile Val Lys Asn Trp Gln Gln Arg Tyr Phe Val Leu Arg
50 55 60

Ala Gln Gln Leu Tyr Tyr Lys Asp Glu Glu Asp Thr Lys Pro Gln
65 70 75 80

Gly Cys Met Tyr Leu Pro Gly Cys Thr Ile Lys Glu Ile Ala Thr Asn
85 90 95

Pro Glu Glu Ala Gly Lys Phe Val Phe Glu Ile Ile Pro Ala Ser Trp
100 105 110

Asp Gln Asn Arg Met Gly Gln Asp Ser Tyr Val Leu Met Ala Ser Ser
115 120 125

Gln Ala Glu Met Glu Glu Trp Val Lys Phe Leu Arg Arg Val Ala Gly
130 135 140

Thr Pro Cys Gly Val Phe Gly Gln Arg Leu Asp Glu Thr Val Ala Tyr
145 150 155 160

Glu Gln Lys Phe Gly Pro His Leu Val Pro Ile Leu Val Glu Lys Cys
165 170 175

Ala Glu Phe Ile Leu Glu His Gly Arg Asn Glu Glu Gly Ile Phe Arg
180 185 190

Leu Pro Gly Gln Asp Asn Leu Val Lys Gln Leu Arg Asp Ala Phe Asp
195 200 205

Ala Gly Glu Arg Pro Ser Phe Asp Arg Asp Thr Asp Val His Thr Val
210 215 220

Ala Ser Leu Leu Lys Leu Tyr Leu Arg Asp Leu Pro Glu Pro Val Val
225 230 235 240

Pro Trp Ser Gln Tyr Glu Gly Phe Leu Leu Cys Gly Gln Leu Thr Asn
245 250 255

Ala Asp Glu Ala Lys Ala Gln Gln Glu Leu Met Lys Gln Leu Ser Ile
260 265 270

Leu Pro Arg Asp Asn Tyr Ser Leu Leu Ser Tyr Ile Cys Arg Phe Leu
275 280 285

His Glu Ile Gln Leu Asn Cys Ala Val Asn Lys Met Ser Val Asp Asn
290 295 300

Leu Ala Thr Val Ile Gly Val Asn Leu Ile Arg Ser Lys Val Glu Asp
305 310 315 320

Pro Ala Val Ile Met Arg Gly Thr Pro Gln Ile Gln Arg Val Met Thr
325 330 335

Met Met Ile Arg Asp His Glu Val Leu Phe Pro Lys Ser Lys Asp Ile
340 345 350

Pro Leu Ser Pro Pro Ala Gln Lys Asn Asp Pro Lys Lys Ala Pro Val
355 360 365

Ala Arg Ser Ser Val Gly Trp Asp Ala Thr Glu Asp Leu Arg Ile Ser
370 375 380

Arg Thr Asp Ser Phe Ser Ser Met Thr Ser Asp Ser Asp Thr Thr Ser
385 390 395 400

Pro Thr Gly Gln Gln Pro Ser Asp Ala Phe Pro Glu Asp Ser Ser Lys
405 410 415

Val Pro Arg Glu Lys Pro Gly Asp Trp Lys Met Gln Ser Arg Lys Arg
420 425 430

Thr Gln Thr Leu Pro Asn Arg Lys Cys Phe Leu Thr Ser Ala Phe Gln
435 440 445

Gly Ala Asn Ser Ser Lys Met Glu Ile Phe Lys Asn Glu Phe Trp Ser
450 455 460

Pro Ser Ser Glu Ala Lys Ala Gly Glu Gly His Arg Arg Thr Met Ser
465 470 475 480

Gln Asp Leu Arg Gln Leu Ser Asp Ser Gln Arg Thr Ser Thr Tyr Asp
485 490 495

Asn Val Pro Ser Leu Pro Gly Ser Pro Gly Glu Glu Ala Ser Ala Leu
500 505 510

Ser Ser Gln Ala Cys Asp Ser Lys Gly Asp Thr Leu Ala Ser Pro Asn
515 520 525

Ser Glu Thr Gly Pro Gly Lys Lys Asn Ser Gly Glu Glu Glu Ile Asp
530 535 540

Ser Leu Gln Arg Met Val Gln Glu Leu Arg Lys Glu Ile Glu Thr Gln
545 550 555 560

Lys Gln Met Tyr Glu Glu Gln Ile Lys Asn Leu Glu Lys Glu Asn Tyr
565 570 575

Asp Val Trp Ala Lys Val Val Arg Leu Asn Glu Glu Leu Glu Lys Glu
580 585 590

Lys Lys Lys Ser Ala Ala Leu Glu Ile Ser Leu Arg Asn Met Glu Arg
595 600 605

Ser Arg Glu Asp Val Glu Lys Arg Asn Lys Ala Leu Glu Glu Glu Val
610 615 620

Lys Glu Phe Val Lys Ser Met Lys Glu Pro Lys Thr Glu Ala
625 630 635

<210> 74
<211> 239
<212> PRT
<213> Homo sapiens

<400> 74

Met His Gln Thr Tyr Ser Arg His Cys Arg Pro Glu Glu Ser Thr Phe
1 5 10 15

Ser Ala Ala Met Thr Thr Met Gln Gly Met Glu Gln Ala Met Pro Gly
20 25 30

Ala Gly Pro Gly Val Pro Gln Leu Gly Asn Met Ala Val Ile His Ser
35 40 45

His Leu Trp Lys Gly Leu Gln Glu Lys Phe Leu Lys Gly Glu Pro Lys
50 55 60

Val Leu Gly Val Val Gln Ile Leu Thr Ala Leu Met Ser Leu Ser Met
65 70 75 80

Gly Ile Thr Met Met Cys Met Ala Ser Asn Thr Tyr Gly Ser Asn Pro
85 90 95

Ile Ser Val Tyr Ile Gly Tyr Thr Ile Trp Gly Ser Val Met Phe Ile
100 105 110

Ile Ser Gly Ser Leu Ser Ile Ala Ala Gly Ile Arg Thr Thr Lys Gly
115 120 125

Leu Val Arg Gly Ser Leu Gly Met Asn Ile Thr Ser Ser Val Leu Ala
130 135 140

Ala Ser Gly Ile Leu Ile Asn Thr Phe Ser Leu Ala Phe Tyr Ser Phe
145 150 155 160

His His Pro Tyr Cys Asn Tyr Tyr Gly Asn Ser Asn Asn Cys His Gly
165 170 175

Thr Met Ser Ile Leu Met Gly Leu Asp Gly Met Val Leu Leu Ser

180

185

190

Val Leu Glu Phe Cys Ile Ala Val Ser Leu Ser Ala Phe Gly Cys Lys
195 200 205

Val Leu Cys Cys Thr Pro Gly Gly Val Val Leu Ile Leu Pro Ser His
210 215 220

Ser His Met Ala Glu Thr Ala Ser Pro Thr Pro Leu Asn Glu Val
225 230 235

<210> 75

<211> 91

<212> PRT

<213> Homo sapiens

<400> 75

Met Leu Arg Pro Ser Glu Trp Asn Arg Asp Thr Leu Pro Ser Asn Met
1 5 10 15

Tyr Gln Lys Asn Gly Leu His His Gly Lys Tyr Ala Val Lys Lys Ser
20 25 30

Arg Arg Thr Asp Val Glu Asp Leu Thr Pro Asn Pro Lys Lys Leu Leu
35 40 45

Gln Ile Gly Asn Glu Leu Arg Lys Leu Asn Lys Val Ile Ser Asp Leu
50 55 60

Thr Pro Val Ser Glu Leu Pro Leu Thr Ala Arg Pro Arg Ser Arg Lys
65 70 75 80

Glu Lys Asn Ser Trp Leu Pro Glu Leu Val Gly
85 90

<210> 76

<211> 849

<212> PRT

<213> Homo sapiens

<400> 76

Met Ser Asp Thr Arg Arg Arg Val Lys Val Tyr Thr Leu Asn Glu Asp
1 5 10 15

Arg Gln Trp Asp Asp Arg Gly Thr Gly His Val Ser Ser Thr Tyr Val
20 25 30

Glu Glu Leu Lys Gly Met Ser Leu Leu Val Arg Ala Glu Ser Asp Gly
35 40 45

Ser Leu Leu Leu Glu Ser Lys Ile Asn Pro Asn Thr Ala Tyr Gln Lys
50 55 60

Gln Gln Asp Thr Leu Ile Val Trp Ser Glu Ala Glu Asn Tyr Asp Leu
65 70 75 80

Ala Leu Ser Phe Gln Glu Lys Ala Gly Cys Asp Glu Ile Trp Glu Lys
85 90 95

Ile Cys Gln Val Gln Gly Lys Asp Pro Ser Val Glu Val Thr Gln Asp
100 105 110

Leu Ile Asp Glu Ser Glu Glu Arg Phe Glu Glu Met Pro Glu Thr
115 120 125

Ser His Leu Ile Asp Leu Pro Thr Cys Glu Leu Asn Lys Leu Glu Glu
130 135 140

Ile Ala Asp Leu Val Thr Ser Val Leu Ser Ser Pro Ile Arg Arg Glu
145 150 155 160

Lys Leu Ala Leu Ala Leu Glu Asn Glu Gly Tyr Ile Lys Lys Leu Leu
165 170 175

Gln Leu Phe Gln Ala Cys Glu Asn Leu Glu Asn Thr Glu Gly Leu His
180 185 190

His Leu Tyr Glu Ile Ile Arg Gly Ile Leu Phe Leu Asn Lys Ala Thr
195 200 205

Leu Phe Glu Val Met Phe Ser Asp Glu Cys Ile Met Asp Val Val Gly
210 215 220

Cys Leu Glu Tyr Asp Pro Ala Leu Ala Gln Pro Lys Arg His Arg Glu
225 230 235 240

Phe Leu Thr Lys Thr Ala Lys Phe Lys Glu Val Ile Pro Ile Thr Asp
245 250 255

Ser Glu Leu Arg Gln Lys Ile His Gln Thr Tyr Arg Val Gln Tyr Ile
260 265 270

Gln Asp Ile Ile Leu Pro Thr Pro Ser Val Phe Glu Glu Asn Phe Leu
275 280 285

Ser Thr Leu Thr Ser Phe Ile Phe Phe Asn Lys Val Glu Ile Val Ser
290 295 300

Met Leu Gln Glu Asp Glu Lys Phe Leu Ser Glu Val Phe Ala Gln Leu
305 310 315 320

Thr Asp Glu Ala Thr Asp Asp Asp Lys Arg Arg Glu Leu Val Asn Phe
325 330 335

Phe Lys Glu Phe Cys Ala Phe Ser Gln Thr Leu Gln Pro Gln Asn Arg
340 345 350

Asp Ala Phe Phe Lys Thr Leu Ala Lys Leu Gly Ile Leu Pro Ala Leu
355 360 365

Glu Ile Val Met Gly Met Asp Asp Leu Gln Val Arg Ser Ala Ala Thr
370 375 380

Asp Ile Phe Ser Tyr Leu Val Glu Phe Ser Pro Ser Met Val Arg Glu
385 390 395 400

Phe Val Met Gln Glu Ala Gln Gln Ser Asp Asp Asp Ile Leu Leu Ile
405 410 415

Asn Val Val Ile Glu Gln Met Ile Cys Asp Thr Asp Pro Glu Leu Gly
420 425 430

Gly Ala Val Gln Leu Met Gly Leu Leu Arg Thr Leu Ile Asp Pro Glu
435 440 445

Asn Met Leu Ala Thr Thr Asn Lys Thr Glu Lys Ser Glu Phe Leu Asn
450 455 460

Phe Phe Tyr Asn His Cys Met His Val Leu Thr Ala Pro Leu Leu Thr
465 470 475 480

Asn Thr Ser Glu Asp Lys Cys Glu Lys Asp Phe Phe Leu Lys His Tyr
485 490 495

Arg Tyr Ser Trp Ser Phe Ile Cys Thr Pro Ser His Ser His Ser His
500 505 510

Ser Thr Pro Ser Ser Ser Ile Ser Gln Asp Asn Ile Val Gly Ser Asn
515 520 525

Lys Asn Asn Thr Ile Cys Pro Asp Asn Tyr Gln Thr Ala Gln Leu Leu
530 535 540

Ala Leu Ile Leu Glu Leu Leu Thr Phe Cys Val Glu His His Thr Tyr
545 550 555 560

His Ile Lys Asn Tyr Ile Met Asn Lys Asp Leu Leu Arg Arg Val Leu
565 570 575

Val Leu Met Asn Ser Lys His Thr Phe Leu Ala Leu Cys Ala Leu Arg
580 585 590

Phe Met Arg Arg Ile Ile Gly Leu Lys Asp Glu Phe Tyr Asn Arg Tyr
595 600 605

Ile Thr Lys Gly Asn Leu Phe Glu Pro Val Ile Asn Ala Leu Leu Asp
610 615 620

Asn Gly Thr Arg Tyr Asn Leu Leu Asn Ser Ala Val Ile Glu Leu Phe
625 630 635 640

Glu Phe Ile Arg Val Glu Asp Ile Lys Ser Leu Thr Ala His Ile Val
645 650 655

Glu Asn Phe Tyr Lys Ala Leu Glu Ser Ile Glu Tyr Val Gln Thr Phe
660 665 670

Lys Gly Leu Lys Thr Lys Tyr Glu Gln Glu Lys Asp Arg Gln Asn Gln
675 680 685

Lys Leu Asn Ser Val Pro Ser Ile Leu Arg Ser Asn Arg Phe Arg Arg
690 695 700

Asp Ala Lys Ala Leu Glu Glu Asp Glu Glu Met Trp Phe Asn Glu Asp
705 710 715 720

Glu Glu Glu Gly Lys Ala Val Val Ala Pro Val Glu Lys Pro Lys
725 730 735

Pro Glu Asp Asp Phe Pro Asp Asn Tyr Glu Lys Phe Met Glu Thr Lys
740 745 750

Lys Ala Lys Glu Ser Glu Asp Lys Glu Asn Leu Pro Lys Arg Thr Ser
755 760 765

Pro Gly Gly Phe Lys Phe Thr Phe Ser His Ser Ala Ser Ala Ala Asn
770 775 780

Gly Thr Asn Ser Lys Ser Val Val Ala Gln Ile Pro Pro Ala Thr Ser
785 790 795 800

Asn Gly Ser Ser Ser Lys Thr Thr Asn Leu Pro Thr Ser Val Thr Ala
805 810 815

Thr Lys Gly Ser Leu Val Gly Leu Val Asp Tyr Pro Asp Asp Glu Glu
820 825 830

Glu Asp Glu Glu Glu Ser Ser Pro Arg Lys Arg Pro Arg Leu Gly
835 840 845

Ser

<210> 77
<211> 214
<212> PRT
<213> Homo sapiens

<400> 77

Met Ser Gly Gly Gln Thr Glu Gly Arg Val Pro Val Phe Ser His Glu
1 5 10 15

Val Val Pro Asp His Leu Arg Thr Lys Pro Asp Pro Glu Val Glu Glu
20 25 30

Gln Glu Lys Gln Leu Thr Thr Asp Ala Ala Arg Ile Gly Ala Asp Ala
35 40 45

Ala Gln Lys Gln Ile Gln Ser Leu Asn Lys Met Cys Ser Asn Leu Leu
50 55 60

Glu Lys Ile Ser Lys Glu Glu Arg Glu Ser Glu Ser Gly Gly Leu Arg
65 70 75 80

Pro Asn Lys Gln Thr Phe Asn Pro Thr Asp Thr Asn Ala Leu Val Ala
85 90 95

Ala Val Ala Phe Gly Lys Gly Leu Ser Asn Trp Arg Pro Ser Gly Ser
100 105 110

Ser Gly Pro Gly Gln Ala Gly Gln Pro Gly Ala Gly Thr Ile Leu Ala
115 120 125

Gly Thr Ser Gly Leu Gln Gln Val Gln Met Ala Gly Ala Pro Ser Gln
130 135 140

Gln Gln Pro Met Leu Ser Gly Val Gln Met Ala Gln Ala Gly Gln Pro
145 150 155 160

Gly Lys Met Pro Ser Gly Ile Lys Thr Asn Ile Lys Ser Ala Ser Met
165 170 175

His Pro Tyr Gln Arg Pro Ser Cys Leu Gly Phe Ile Leu Ala Ile Pro
180 185 190

Leu Arg Arg Lys Val Lys Lys Leu Leu Gly Gln Glu Gly Lys Lys Asn
195 200 205

Ala His Leu Gln Leu Trp
210

<210> 78
<211> 1404
<212> PRT
<213> Homo sapiens

<400> 78

Met Ala Trp Lys Thr Leu Pro Ile Tyr Leu Leu Leu Leu Ser Val
1 5 10 15

Phe Val Ile Gln Gln Val Ser Ser Gln Asp Leu Ser Ser Cys Ala Gly
20 25 30

Arg Cys Gly Glu Gly Tyr Ser Arg Asp Ala Thr Cys Asn Cys Asp Tyr
35 40 45

Asn Cys Gln His Tyr Met Glu Cys Cys Pro Asp Phe Lys Arg Val Cys
50 55 60

Thr Ala Glu Leu Ser Cys Lys Gly Arg Cys Phe Glu Ser Phe Glu Arg
65 70 75 80

Gly Arg Glu Cys Asp Cys Asp Ala Gln Cys Lys Lys Tyr Asp Lys Cys
85 90 95

Cys Pro Asp Tyr Glu Ser Phe Cys Ala Glu Val His Asn Pro Thr Ser
100 105 110

Pro Pro Ser Ser Lys Lys Ala Pro Pro Pro Ser Gly Ala Ser Gln Thr
115 120 125

Ile Lys Ser Thr Thr Lys Arg Ser Pro Lys Pro Pro Asn Lys Lys Lys
130 135 140

Thr Lys Lys Val Ile Glu Ser Glu Glu Ile Thr Glu Glu His Ser Val
145 150 155 160

Ser Glu Asn Gln Glu Ser
165 170 175

Ser Thr Ile Arg Lys Ile Lys Ser Ser Lys Asn Ser Ala Ala Asn Arg

180

185

190

Glu Leu Gln Lys Lys Leu Lys Val Lys Asp Asn Lys Lys Asn Arg Thr
195 200 205

Lys Lys Lys Pro Thr Pro Lys Pro Pro Val Val Asp Glu Ala Gly Ser
210 215 220

Gly Leu Asp Asn Gly Asp Phe Lys Val Thr Thr Pro Asp Thr Ser Thr
225 230 235 240

Thr Gln His Asn Lys Val Ser Thr Ser Pro Lys Ile Thr Thr Ala Lys
245 250 255

Pro Ile Asn Pro Arg Pro Ser Leu Pro Pro Asn Ser Asp Thr Ser Lys
260 265 270

Glu Thr Ser Leu Thr Val Asn Lys Glu Thr Thr Val Glu Thr Lys Glu
275 280 285

Thr Thr Thr Asn Lys Gln Thr Ser Thr Asp Gly Lys Glu Lys Thr
290 295 300

Thr Ser Ala Lys Glu Thr Gln Ser Ile Glu Lys Thr Ser Ala Lys Asp
305 310 315 320

Leu Ala Pro Thr Ser Lys Val Leu Ala Lys Pro Thr Pro Lys Ala Glu
325 330 335

Thr Thr Thr Lys Gly Pro Ala Leu Thr Thr Pro Lys Glu Pro Thr Pro
340 345 350

Thr Thr Pro Lys Glu Pro Ala Ser Thr Thr Pro Lys Glu Pro Thr Pro
355 360 365

Thr Thr Ile Lys Ser Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr
370 375 380

Thr Thr Lys Ser Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr
385 390 395 400

Thr Lys Glu Pro Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr
405 410 415

Thr Lys Glu Pro Ala Pro Thr Thr Lys Ser Ala Pro Thr Thr Pro
420 425 430

Lys Glu Pro Ala Pro Thr Thr Pro Lys Lys Pro Ala Pro Thr Thr Pro

435

440

445

Lys Glu Pro Ala Pro Thr Thr Pro Lys Glu Pro Thr Pro Thr Thr Pro
450 455 460

Lys Glu Pro Ala Pro Thr Thr Lys Glu Pro Ala Pro Thr Thr Pro Lys
465 470 475 480

Glu Pro Ala Pro Thr Ala Pro Lys Lys Pro Ala Pro Thr Thr Pro Lys
485 490 495

Glu Pro Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr Lys
500 505 510

Glu Pro Ser Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr Lys
515 520 525

Ser Ala Pro Thr Thr Lys Glu Pro Ala Pro Thr Thr Lys Ser
530 535 540

Ala Pro Thr Thr Pro Lys Glu Pro Ser Pro Thr Thr Lys Glu Pro
545 550 555 560

Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr Pro Lys Lys Pro
565 570 575

Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr Pro Lys Glu Pro
580 585 590

Ala Pro Thr Thr Lys Lys Pro Ala Pro Thr Thr Pro Lys Glu Pro
595 600 605

Ala Pro Thr Thr Pro Lys Glu Thr Ala Pro Thr Thr Pro Lys Lys Leu
610 615 620

Thr Pro Thr Thr Pro Glu Lys Leu Ala Pro Thr Thr Pro Glu Lys Pro
625 630 635 640

Ala Pro Thr Thr Pro Glu Glu Leu Ala Pro Thr Thr Pro Glu Glu Pro
645 650 655

Thr Pro Thr Thr Pro Glu Glu Pro Ala Pro Thr Thr Pro Lys Ala Ala
660 665 670

Ala Pro Asn Thr Pro Lys Glu Pro Ala Pro Thr Thr Pro Lys Glu Pro
675 680 685

Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr Pro Lys Glu Thr

690

695

700

Ala Pro Thr Thr Pro Lys Gly Thr Ala Pro Thr Thr Leu Lys Glu Pro
705 710 715 720

Ala Pro Thr Thr Pro Lys Lys Pro Ala Pro Lys Glu Leu Ala Pro Thr
725 730 735

Thr Thr Lys Glu Pro Thr Ser Thr Thr Cys Asp Lys Pro Ala Pro Thr
740 745 750

Thr Pro Lys Gly Thr Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr
755 760 765

Thr Pro Lys Glu Pro Ala Pro Thr Thr Pro Lys Gly Thr Ala Pro Thr
770 775 780

Thr Leu Lys Glu Pro Ala Pro Thr Thr Pro Lys Lys Pro Ala Pro Lys
785 790 795 800

Glu Leu Ala Pro Thr Thr Lys Gly Pro Thr Ser Thr Thr Ser Asp
805 810 815

Lys Pro Ala Pro Thr Thr Pro Lys Glu Thr Ala Pro Thr Thr Pro Lys
820 825 830

Glu Pro Ala Pro Thr Thr Pro Lys Lys Pro Ala Pro Thr Thr Pro Glu
835 840 845

Thr Pro Pro Pro Thr Thr Ser Glu Val Ser Thr Pro Thr Thr Thr Lys
850 855 860

Glu Pro Thr Thr Ile His Lys Ser Pro Asp Glu Ser Thr Pro Glu Leu
865 870 875 880

Ser Ala Glu Pro Thr Pro Lys Ala Leu Glu Asn Ser Pro Lys Glu Pro
885 890 895

Gly Val Pro Thr Thr Lys Thr Pro Ala Ala Thr Lys Pro Glu Met Thr
900 905 910

Thr Thr Ala Lys Asp Lys Thr Thr Glu Arg Asp Leu Arg Thr Thr Pro
915 920 925

Glu Thr Thr Thr Ala Ala Pro Lys Met Thr Lys Glu Thr Ala Thr Thr
930 935 940

Thr Glu Lys Thr Thr Glu Ser Ile Thr Ala Thr Thr Gln Val

945 950 955 960
Thr Ser Thr Thr Thr Gln Asp Thr Thr Pro Phe Lys Ile Thr Thr Leu
965 970 975

Lys Thr Thr Thr Leu Ala Pro Lys Val Thr Thr Lys Lys Thr Ile
980 985 990

Thr Thr Thr Glu Ile Met Asn Lys Pro Glu Glu Thr Ala Lys Pro Lys
995 1000 1005

Asp Arg Ala Thr Asn Ser Lys Ala Thr Thr Pro Lys Pro Gln Lys
1010 1015 1020

Pro Thr Lys Ala Pro Lys Lys Pro Thr Ser Thr Lys Lys Pro Lys
1025 1030 1035

Thr Met Pro Arg Val Arg Lys Pro Lys Thr Thr Pro Thr Pro Arg
1040 1045 1050

Lys Met Thr Ser Thr Met Pro Glu Leu Asn Pro Thr Ser Arg Ile
1055 1060 1065

Ala Glu Ala Met Leu Gln Thr Thr Thr Arg Pro Asn Gln Thr Pro
1070 1075 1080

Asn Ser Lys Leu Val Glu Val Asn Pro Lys Ser Glu Asp Ala Gly
1085 1090 1095

Gly Ala Glu Gly Glu Thr Pro His Met Leu Leu Arg Pro His Val
1100 1105 1110

Phe Met Pro Glu Val Thr Pro Asp Met Asp Tyr Leu Pro Arg Val
1115 1120 1125

Pro Asn Gln Gly Ile Ile Ile Asn Pro Met Leu Ser Asp Glu Thr
1130 1135 1140

Asn Ile Cys Asn Gly Lys Pro Val Asp Gly Leu Thr Thr Leu Arg
1145 1150 1155

Asn Gly Thr Leu Val Ala Phe Arg Gly His Tyr Phe Trp Met Leu
1160 1165 1170

Ser Pro Phe Ser Pro Pro Ser Pro Ala Arg Arg Ile Thr Glu Val
1175 1180 1185

Trp Gly Ile Pro Ser Pro Ile Asp Thr Val Phe Thr Arg Cys Asn

1190 1195 1200

Cys Glu Gly Lys Thr Phe Phe Phe Lys Asp Ser Gln Tyr Trp Arg
1205 1210 1215

Phe Thr Asn Asp Ile Lys Asp Ala Gly Tyr Pro Lys Pro Ile Phe
1220 1225 1230

Lys Gly Phe Gly Gly Leu Thr Gly Gln Ile Val Ala Ala Leu Ser
1235 1240 1245

Thr Ala Lys Tyr Lys Asn Trp Pro Glu Ser Val Tyr Phe Phe Lys
1250 1255 1260

Arg Gly Gly Ser Ile Gln Gln Tyr Ile Tyr Lys Gln Glu Pro Val
1265 1270 1275

Gln Lys Cys Pro Gly Arg Arg Pro Ala Leu Asn Tyr Pro Val Tyr
1280 1285 1290

Gly Glu Thr Thr Gln Val Arg Arg Arg Arg Phe Glu Arg Ala Ile
1295 1300 1305

Gly Pro Ser Gln Thr His Thr Ile Arg Ile Gln Tyr Ser Pro Ala
1310 1315 1320

Arg Leu Ala Tyr Gln Asp Lys Gly Val Leu His Asn Glu Val Lys
1325 1330 1335

Val Ser Ile Leu Trp Arg Gly Leu Pro Asn Val Val Thr Ser Ala
1340 1345 1350

Ile Ser Leu Pro Asn Ile Arg Lys Pro Asp Gly Tyr Asp Tyr Tyr
1355 1360 1365

Ala Phe Ser Lys Asp Gln Tyr Tyr Asn Ile Asp Val Pro Ser Arg
1370 1375 1380

Thr Ala Arg Ala Ile Thr Thr Arg Ser Gly Gln Thr Leu Ser Lys
1385 1390 1395

Val Trp Tyr Asn Cys Pro
1400

<210> 79
<211> 784
<212> PRT
<213> Homo sapiens

<400> 73

Met Val Gly Lys His Leu Gly Ala Arg Lys Asp His Pro Gly Leu Lys
1 5 10 15

Ala Lys Glu Asn Asp Glu Asn Cys Gly Pro Thr Thr Thr Val Phe Val
20 25 30

Gly Asn Ile Ser Glu Lys Ala Ser Asp Met Leu Ile Arg Gln Leu Leu
35 40 45

Ala Lys Cys Gly Leu Val Leu Ser Trp Lys Arg Val Gln Gly Ala Ser
50 55 60

Gly Lys Leu Gln Ala Phe Gly Phe Cys Glu Tyr Lys Glu Pro Glu Ser
65 70 75 80

Thr Leu Arg Ala Leu Arg Leu Leu His Asp Leu Gln Ile Gly Glu Lys
85 90 95

Lys Leu Leu Val Lys Val Asp Ala Lys Thr Lys Ala Gln Leu Asp Glu
100 105 110

Trp Lys Ala Lys Lys Ala Ser Asn Gly Asn Ala Arg Pro Glu Thr
115 120 125

Val Thr Asn Asp Asp Glu Glu Ala Leu Asp Glu Glu Thr Lys Arg Arg
130 135 140

Asp Gln Met Ile Lys Gly Ala Ile Glu Val Leu Ile Arg Glu Tyr Ser
145 150 155 160

Ser Glu Leu Asn Ala Pro Ser Gln Glu Ser Asp Ser His Pro Arg Lys
165 170 175

Lys Lys Lys Glu Lys Lys Glu Asp Ile Phe Arg Arg Phe Pro Val Ala
180 185 190

Pro Leu Ile Pro Tyr Pro Leu Ile Thr Lys Glu Asp Ile Asn Ala Ile
195 200 205

Glu Met Glu Glu Asp Lys Arg Asp Leu Ile Ser Arg Glu Ile Ser Lys
210 215 220

Phe Arg Asp Thr His Lys Lys Leu Glu Glu Lys Gly Lys Lys Glu
225 230 235 240

Lys Glu Arg Gln Glu Ile Glu Lys Glu Arg Arg Glu Arg Glu Arg Glu
245 250 255

Arg Glu Arg Glu Arg Glu Arg Arg Glu Arg Glu Arg Glu Arg
260 265 270

Glu Arg Glu Arg Glu Lys Glu Lys Glu Arg Glu Arg Glu Arg
275 280 285

Asp Arg Asp Arg Asp Arg Thr Lys Glu Arg Asp Arg Asp Arg Asp Arg
290 295 300

Glu Arg Asp Arg Asp Arg Asp Arg Glu Arg Ser Ser Asp Arg Asn Lys
305 310 315 320

Asp Arg Ser Arg Ser Arg Glu Lys Ser Arg Asp Arg Glu Arg Glu Arg
325 330 335

Glu Arg
340 345 350

Glu Arg Glu Lys
355 360 365

Asp Lys Lys Arg Asp Arg Glu Glu Asp Glu Glu Asp Ala Tyr Glu Arg
370 375 380

Arg Lys Leu Glu Arg Lys Leu Arg Glu Lys Glu Ala Ala Tyr Gln Glu
385 390 395 400

Arg Leu Lys Asn Trp Glu Ile Arg Glu Arg Lys Lys Thr Arg Glu Tyr
405 410 415

Glu Lys Glu Ala Glu Arg Glu Glu Arg Arg Arg Glu Met Ala Lys
420 425 430

Glu Ala Lys Arg Leu Lys Glu Phe Leu Glu Asp Tyr Asp Asp Asp Arg
435 440 445

Asp Asp Pro Lys Tyr Tyr Arg Gly Ser Ala Leu Gln Lys Arg Leu Arg
450 455 460

Asp Arg Glu Lys Glu Met Glu Ala Asp Glu Arg Asp Arg Lys Arg Glu
465 470 475 480

Lys Glu Glu Leu Glu Glu Ile Arg Gln Arg Leu Leu Ala Glu Gly His
485 490 495

Pro Asp Pro Asp Ala Glu Leu Gln Arg Met Glu Gln Glu Ala Glu Arg
500 505 510

Arg Arg Gln Pro Gln Ile Lys Gln Glu Pro Glu Ser Glu Glu Glu Glu
515 520 525

Glu Glu Lys Gln Glu Lys Glu Glu Lys Arg Glu Glu Pro Met Glu Glu
530 535 540

Glu Glu Glu Pro Glu Gln Lys Pro Cys Leu Lys Pro Thr Leu Arg Pro
545 550 555 560

Ile Ser Ser Ala Pro Ser Val Ser Ser Ala Ser Gly Asn Ala Thr Pro
565 570 575

Asn Thr Pro Gly Asp Glu Ser Pro Cys Gly Ile Ile Pro His Glu
580 585 590

Asn Ser Pro Asp Gln Gln Pro Glu Glu His Arg Pro Lys Ile Gly
595 600 605

Leu Ser Leu Lys Leu Gly Ala Ser Asn Ser Pro Gly Gln Pro Asn Ser
610 615 620

Val Lys Arg Lys Lys Leu Pro Val Asp Ser Val Phe Asn Lys Phe Glu
625 630 635 640

Asp Glu Asp Ser Asp Asp Val Pro Arg Lys Arg Lys Leu Val Pro Leu
645 650 655

Asp Tyr Gly Glu Asp Asp Lys Asn Ala Thr Lys Gly Thr Val Asn Thr
660 665 670

Glu Glu Lys Arg Lys His Ile Lys Ser Leu Ile Glu Lys Ile Pro Thr
675 680 685

Ala Lys Pro Glu Leu Phe Ala Tyr Pro Leu Asp Trp Ser Ile Val Asp
690 695 700

Ser Ile Leu Met Glu Arg Arg Ile Arg Pro Trp Ile Asn Lys Lys Ile
705 710 715 720

Ile Glu Tyr Ile Gly Glu Glu Ala Thr Leu Val Asp Phe Val Cys
725 730 735

Ser Lys Val Met Ala His Ser Ser Pro Gln Ser Ile Leu Asp Asp Val
740 745 750

Ala Met Val Leu Asp Glu Glu Ala Glu Val Phe Ile Val Lys Met Trp
755 760 765

Arg Leu Leu Ile Tyr Glu Thr Glu Ala Lys Lys Ile Gly Leu Val Lys
770 775 780

<210> 80
<211> 735
<212> PRT
<213> Homo sapiens

<400> 80

Lys Cys Gly Leu Val Leu Ser Trp Lys Arg Val Gln Gly Ala Ser Gly
1 5 10 15

Lys Leu Gln Ala Phe Gly Phe Cys Glu Tyr Lys Glu Pro Glu Ser Thr
20 25 30

Leu Arg Ala Leu Arg Leu Leu His Asp Leu Gln Ile Gly Glu Lys Lys
35 40 45

Leu Leu Val Lys Val Asp Ala Lys Thr Lys Ala Gln Leu Asp Glu Trp
50 55 60

Lys Ala Lys Lys Ala Ser Asn Gly Asn Ala Arg Pro Glu Thr Val
65 70 75 80

Thr Asn Asp Asp Glu Glu Ala Leu Asp Glu Glu Thr Lys Arg Arg Asp
85 90 95

Gln Met Ile Lys Gly Ala Ile Glu Val Leu Ile Arg Glu Tyr Ser Ser
100 105 110

Glu Leu Asn Ala Pro Ser Gln Glu Ser Asp Ser His Pro Arg Lys Lys
115 120 125

Lys Lys Glu Lys Lys Glu Asp Ile Phe Arg Arg Phe Pro Val Ala Pro
130 135 140

Leu Ile Pro Tyr Pro Leu Ile Thr Lys Glu Asp Ile Asn Ala Ile Glu
145 150 155 160

Met Glu Glu Asp Lys Arg Asp Leu Ile Ser Arg Glu Ile Ser Lys Phe
165 170 175

Arg Asp Thr His Lys Lys Leu Glu Glu Lys Gly Lys Lys Glu Lys
180 185 190

Glu Arg Gin Glu Ile Glu Lys Glu Arg Arg Glu Arg Glu Arg Glu Arg
195 200 205

Glu Arg Glu Arg Glu Arg Arg Glu Arg Glu Arg Glu Arg Glu
210 215 220

Arg Glu Arg Glu Lys Glu Lys Glu Arg Glu Arg Glu Arg Asp
225 230 235 240

Arg Asp Arg Asp Arg Thr Lys Glu Arg Asp Arg Asp Arg Asp Arg Glu
245 250 255

Arg Asp Arg Asp Arg Asp Arg Glu Arg Ser Ser Asp Arg Asn Lys Asp
260 265 270

Arg Ser Arg Ser Arg Glu Lys Ser Arg Asp Arg Glu Arg Glu Arg Glu
275 280 285

Arg Glu
290 295 300

Arg Glu Lys Asp
305 310 315 320

Lys Lys Arg Asp Arg Glu Glu Asp Glu Glu Asp Ala Tyr Glu Arg Arg
325 330 335

Lys Leu Glu Arg Lys Leu Arg Glu Lys Glu Ala Ala Tyr Gln Glu Arg
340 345 350

Leu Lys Asn Trp Glu Ile Arg Glu Arg Lys Lys Thr Arg Glu Tyr Glu
355 360 365

Lys Glu Ala Glu Arg Glu Glu Arg Arg Arg Glu Met Ala Lys Glu
370 375 380

Ala Lys Arg Leu Lys Glu Phe Leu Glu Asp Tyr Asp Asp Asp Arg Asp
385 390 395 400

Asp Pro Lys Tyr Tyr Arg Gly Ser Ala Leu Gln Lys Arg Leu Arg Asp
405 410 415

Arg Glu Lys Glu Met Glu Ala Asp Glu Arg Asp Arg Lys Arg Glu Lys
420 425 430

Glu Glu Leu Glu Glu Ile Arg Gln Arg Leu Leu Ala Glu Gly His Pro
435 440 445

Asp Pro Asp Ala Glu Leu Gln Arg Met Glu Gln Glu Ala Glu Arg Arg
450 455 460

Arg Gln Pro Gln Ile Lys Gln Glu Pro Glu Ser Glu Glu Glu Glu
465 470 475 480

Glu Lys Gln Glu Lys Glu Glu Lys Arg Glu Glu Pro Met Glu Glu Glu
485 490 495

Glu Glu Pro Glu Gln Lys Pro Cys Leu Lys Pro Thr Leu Arg Pro Ile
500 505 510

Ser Ser Ala Pro Ser Val Ser Ser Ala Ser Gly Asn Ala Thr Pro Asn
515 520 525

Thr Pro Gly Asp Glu Ser Pro Cys Gly Ile Ile Ile Pro His Glu Asn
530 535 540

Ser Pro Asp Gln Gln Pro Glu Glu His Arg Pro Lys Ile Gly Leu
545 550 555 560

Ser Leu Lys Leu Gly Ala Ser Asn Ser Pro Gly Gln Pro Asn Ser Val
565 570 575

Lys Arg Lys Lys Leu Pro Val Asp Ser Val Phe Asn Lys Phe Glu Asp
580 585 590

Glu Asp Ser Asp Asp Val Pro Arg Lys Arg Lys Leu Val Pro Leu Asp
595 600 605

Tyr Gly Glu Asp Asp Lys Asn Ala Thr Lys Gly Thr Val Asn Thr Glu
610 615 620

Glu Lys Arg Lys His Ile Lys Ser Leu Ile Glu Lys Ile Pro Thr Ala
625 630 635 640

Lys Pro Glu Leu Phe Ala Tyr Pro Leu Asp Trp Ser Ile Val Asp Ser
645 650 655

Ile Leu Met Glu Arg Arg Ile Arg Pro Trp Ile Asn Lys Lys Ile Ile
660 665 670

Glu Tyr Ile Gly Glu Glu Ala Thr Leu Val Asp Phe Val Cys Ser
675 680 685

Lys Val Met Ala His Ser Ser Pro Gln Ser Ile Leu Asp Asp Val Ala
690 695 700

Met Val Leu Asp Glu Glu Ala Glu Val Phe Ile Val Lys Met Trp Arg
705 710 715 720

Leu Leu Ile Tyr Glu Thr Glu Ala Lys Lys Ile Gly Leu Val Lys
725 730 735